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## ABSTRACT

This document reports the scope of the activities undertaken and the accomplishments being realized as a result of the Educational Innovation Program (EIP) and the Instructional Innovation Program (IIP) at Illinois State University. Abstracts for each program in EIP and IIP include a program description and evaluation/status. Indices for projects are included. (MJM)



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INNOVATION  
AT  
ILLINOIS STATE UNIVERSITY  
1972-73

Edited by

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## PREFACE

This book is an outgrowth of a project which was funded under the Educational Innovation Program (EIP) at Illinois State University to evaluate the remaining projects funded through that program. As the work of the evaluation team progressed, it became clearly evident that the scope of the activities undertaken and the accomplishments being realized as a result of this program and its companion, the Instructional Innovation Program (IIP), should be reported to the university community and to others with interests in the educational program at ISU. Certainly the extensive efforts and willingness of the faculty to face the inherent difficulties and the ever present risk of failure which accompany attempts to produce change deserved public recognition. Then too, there was the hope that a document of this type would serve to stimulate discussion and generate ideas for subsequent innovative approaches to instruction.

The EIP project descriptions in Part I of this book were written and edited by Dr. Eugene H. Jabker, Dr. Elmer A. Lemke, and me. Our sources of information included the project proposals, typescripts of a summative interview conducted for most projects, formal reports submitted for some projects, empirical evidence consisting of test data and questionnaire responses, anecdotal comments, observational notes, memos, and reports of external evaluators. Different combinations of sources were available for the various projects. These materials were synthesized, and summaries were prepared for inclusion in this publication. The principal faculty member in each project was then asked to review the summary for that project. The IIP descriptions in Part II of this book are edited versions of abstracts provided by the faculty member associated with the project.

Many persons helped in putting this publication in its final form. Because of their special contributions to this task several deserve special mention: Kris Nation for providing very capable secretarial assistance; Dave Meece of the ISU Publications Service for the design of the cover; and Marcia Pugliese for her assistance in editing and checking of the typed copy. Finally, the cooperation we received from Stenographic Services and Printing Services was excellent.

R.S.H.

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**PART I**

**THE EDUCATIONAL INNOVATION PROGRAM**

**AT**

**ILLINOIS STATE UNIVERSITY**

## INTRODUCTION

The Educational Innovation Program (EIP) is designed to improve the quality of undergraduate education at Illinois State University. Initiated during the 1972-73 academic year with a generous grant of \$566,000 from the State of Illinois, the program involves 35 separate projects designed by the various departments of the University.

Departmental faculty were invited to submit proposals toward the improvement of existing undergraduate programs. Program guidelines called for proposals which would improve teaching in undergraduate courses, develop new educational delivery systems, create multidisciplinary approaches to learning, expand the use of instructional technology, provide student internships, explore performance evaluation and other competency-based approaches to instruction, provide for evaluation and consequent restructuring of courses and curricula, or otherwise improve the quality of the undergraduate program. In a statement to the Academic Senate, then Dean of the University Gene A. Budig described the purpose of the program as to create "an imaginative, improved, and innovative undergraduate program, an academic program which students as well as faculty will find exciting and challenging."

A total of 83 proposals were submitted requesting a total expenditure of over \$1,600,000, a demonstration in itself of the commitment of faculty and departments to meaningful innovation. Proposals were evaluated by an internal screening committee consisting of Dr. Earl Reitan (History and Chairman of the University Task Force on Instructional Innovation), Dr. Edward Streeter (Information Sciences and Chairman of the University Task Force on Educational Media and Instructional Technology), Jim Manis or Mark Hellner (members of the Student Advisory Committee to the Dean of the University), Dr. Charles Morris (then American Council on Education intern in the Undergraduate Instruction Office), and myself as Dean of Undergraduate Instruction. The screening committee also had the benefit of advice from Dr. Ronald Halinski, Director of Measurement and Evaluation. Dr. Eugene Jabker, Coordinator of Instructional Evaluation, has also been extensively involved in the evaluation process. The proposals were also evaluated by external consultants, Dr. Royce Knapp (Regents Professor of Education, University of Nebraska) and Dr. James C. Olson (Chancellor, University of Missouri - Kansas City), each of whom reacted to some of the proposals. The EIP program also had the benefit of general advice from Dr. Paul Dressel of Michigan State University, particularly in the area of approaches to evaluation of the innovative projects.

A condition of funding of an EIP project was that an evaluation of project outcomes be conducted jointly with the Measurement and Evaluation Service and faculty members undertaking the evaluation. A separate budget for each project was negotiated and established. A few projects covered the academic year; most were implemented during the second semester. A brief description and evaluation of each EIP project is included here. Persons interested in more detailed information on a particular project are encouraged to contact the faculty members involved with that project.

The nature and extent of the EIP projects reported here demonstrate a very real commitment on the part of the faculty of Illinois State University to explore new and hopefully better ways for students to learn. The EIP program represents the modest but serious attempt of one university to implement the thinking of the Carnegie Commission on Higher Education in Reform on Campus:

"We see the decade of the 1970's as a period of innovation, as an era that provides unusual opportunities to improve the quality of academic life, and as a period when the energy for reform that has been released can be combined with the spectrum of available innovations to provide more vital intellectual communities."

A basic thesis of the EIP program is that, to be effective and lasting, educational reform, change, and innovation must be planned and implemented by students and faculty. Nothing makes persons as resistant to new ideas or approaches as the feeling that change is being imposed upon them. As Russell Cooper put it, "The more widely faculty can become involved, the more they will be committed to the innovation and its success." The EIP projects, therefore, were planned and implemented and evaluated by the faculty and students of the University. As the administrator responsible for undergraduate programs, I owe a personal "thank you" to all of the participants in these projects designed to improve the quality of undergraduate education. Special appreciation is also due Presidents David K. Berlo and Gene A. Budig for their active support and encouragement of the EIP program.

Stanley G. Rives  
Dean of Undergraduate Instruction

**EIP**  
**ABSTRACTS**



**PROJECT TITLE: Humanities Education Theatre Company**

**PROJECT FACULTY: Calvin L. Pritner and John R. Sharpham**

**DEPARTMENT: Theatre**

**DESCRIPTION.** Higher education has hardly explored the possibilities of using dramatic activity to deepen and enliven learning. Typically, humanities and liberal arts courses of all types deal with subject matter that can be brought to fuller life through scripted and improvisational dramatizations. In short, the techniques of chamber theatre, readers theatre, and improvisation are essentially unavailable to most university faculty and their students.

Traditionally, Theatre programs have responded to the needs of the humanities and liberal arts by producing plays that are a part of our cultural heritage. While this is a valuable adjunct to any educational program, this project presented a flexible approach to impregnating the curriculum with dramatic activity. As such, the major goal of the project was:

1. To enhance and enliven the study of the humanities through dramatic techniques.

Several secondary objectives were incorporated into the project. They were:

2. To compare the effect on students in a classroom between video taped dramatic presentations and live dramatic presentation.
3. To compare effect, quality, cost, and personnel time involvement between performances given by professional actors and graduate student actors.
4. To prepare 3 - 5 professional quality video tapes of selected performances.

The company of six professional actors performed for approximately 5000 students. Over a sixteen week period they performed fifty-nine different titles giving a total of 128 performances. The actors were called in to perform a wide variety of offerings, often at very short notice. They performed plays and scenes from plays, including As You Like It, Macbeth, Hedda Gabler, Revenger's Tragedy, Waiting for Godot, Desire Under the Elms, Antigone and The Crucible. Play scripts were utilized when a scene from a play might highlight an historical event or some incident related to the subject matter of other disciplines, e.g., scenes from The Crucible for History, The Cage for Corrections and Antigone for Philosophy. Foreign language students had an opportunity to see and hear English language performances of texts they were studying, as Two Faces of the Patron. The actors gave poetry readings and several Chamber Theatre productions adapted from narrative fiction. A reading from The Catonsville Nine was used in a "theme oriented" history class. In Philosophy, History, Biology and Political Science debates and discussions were dramatized allowing students to observe in action events they had been studying in class such as the Scopes Trial or the Lincoln-Douglas debates. The actors also presented a number of impro-

visations built around ideas suggested by the teachers and students. One such improvisation was developed while exploring the area of propaganda, another examined some features of a group therapy session while a third used pantomime as a teaching technique with a group of deaf children at the University Laboratory School.

EVALUATION/STATUS. Student and faculty reactions were systematically gathered during the year. Approximately 2500 students and 50 faculty members completed a short questionnaire administered within two class periods following a performance. The results were overwhelmingly positive: 98 percent of the students and all of the faculty said (1) they enjoyed the performance, and (2) more performances of the type witnessed would be worthwhile.

A number of clues about the use of dramatic activities were suggested by the data collected. As with any properly administered media activity, the dramatic activity must be completely integrated into the classroom presentation. While 95 percent of the students saw a relationship between the performance and what they were studying, a relatively smaller number (75 percent) considered the performance to be a valuable educational experience for them. Also faculty generally pointed to the necessity for preparing the class for the program, while student data pointed to the desirability of discussing the presentation when it was completed. Students particularly enjoyed discussing the production with the actors when they had finished. However, in many cases where adequate planning for the discussion had not taken place, the interaction did not materialize. Thus, with appropriate planning the Humanities Theatre Company can be thought of as a valuable adjunct to the more usual classroom activity.

A few student comments may more vividly portray the impact the company has had:

Seeing a play come to life before my eyes made this entire course seem more real and interesting. It really was amazing to see the transformation of the actors back to their original personalities. The production was superb, and I hope the company will be back next year.

I was very impressed by the performance because it gave me an educational experience much more valuable to me than just reading about the play. It stimulated me more and caused me to think much more than the book itself did. Students become more willing to learn when they get a chance to participate. This play gave me a chance to participate because I got to show my emotions as well as use my head. I liked that!

I had listened to the record and read the play, "Waiting for Godot." It wasn't until the actors' interpretation that it came to life . . .

Probably the most enjoyable hour I have spent at ISU!

And a faculty comment:

One of the outstanding contributions of the performance was the ability of the performers to explore and explain to the class the motivational forces at work in the play from the point of view of the author and the actors. The discussion period following was an ideal situation in which the play became a 'cultural capsule' from which attitudes and values could be examined and understood by the class.

It would be inappropriate to suggest that all student written comments were laudatory. In fact, however, ninety percent of the comments were positive. When negative comments were made, they tended to reflect the fact that because of scheduling difficulties and demand, some performances were given with only a minimal amount of practice. A second source of negative comments related to the lack of integration with the sequence of classroom activity. Then too, some material did not lend itself to the medium as well as other material did. The actors themselves were very sensitive to the first point. They suggested that in order to give "first class" performances, a number of standardized productions be developed. As such, a "library" of offerings could be developed and perfected. This library could be based on the previous year's demand.

With respect to the final objective of the project, video tapes were prepared by the professional actors. To compare the effect on students between video taped and live dramatic presentations a controlled study was undertaken in English 130-Masterpieces of American Literature. The class was randomly divided in half. Sherwood Anderson's "The Strength of God" was taped and shown via TV to one-half of the class and the live presentation to the other half. The same actors were involved in both presentations. Immediately after a semantic differential was administered to evaluate student reaction. The impact of the live presentation was significantly greater. One moderating factor was the sound distortion of the video presentation. While this had a definite influence on the student reaction, it is the type of problem which does accompany technological media.

An attempt was made to assess the feasibility of using graduate students for these performances. The general conclusion reached was that because of the costs involved with professional actors it would be beneficial to experiment with a company composed of graduate students and led by two professional actors.

In general, student-faculty reactions to the Humanities Theatre Company were very positive, indicating that the primary contribution of the dramatic activity was associated with the affective-motivational aspects of classroom activity. It would appear that this is among the most successful and innovative of the EIP projects. A student comment summarizes the general feeling about this project.

"They were great and I found it a valuable educational experience. This is one of the best ideas the university has had . . ."

**PROJECT TITLE:** Individualized Instructional Packages in Physics

**PROJECT FACULTY:** Charles P. Frahm, Kenneth E. Jesse and Robert D. Young

**DEPARTMENT:** Physics

**DESCRIPTION.** The enrollment in lower level general education and service courses offered by the Physics Department has increased sharply in the last few years, making heavy demands on staff time and laboratory facilities. By contrast, the undergraduate enrollment in upper level courses primarily designed for majors in Physics is frequently below an optimum number. The result of this enrollment difference is an attenuation of the number of upper division courses offered majors each semester. This condition has serious implications for both the students and department.

Out of several possible methods to affect this state, the department chose to design a plan for more efficient use of resources in upper division courses in order to increase options available to majors while retaining quality. It was decided to restructure the Physics program around self-paced upper level study packages. The objectives contained in this reworking were:

1. To restructure the Undergraduate Physics Program around individualized upper level materials.
2. To produce these individualized materials for upper level classes of traditionally low enrollment.
3. To identify interdisciplinary or career options which the Physics Department can and should offer.
4. To prepare individualized materials for these options.
5. To establish cooperation with industries to develop Physics externships for undergraduate Physics majors.

Shortly after the beginning of the project, it was decided to prepare instructional packages in four courses: Mathematical Physics, Astro-Physics, Atomic Physics, and Molecular and Solid State Physics. Following a two-day workshop on the Personalized System of Instruction (an adaptation of the Keller Method) presented by Charles Friedman of MIT in the middle of February, the project faculty immediately began the preparation of materials. In brief, the process involved is: the identification of discrete units of material within a total course, delimitation of unit content, statement of precise objectives, description of correspondingly precise student procedures, and writing of appropriate tests. The intent is for these instructional materials to enable students to master course content at a high level of proficiency within a flexible system.

**EVALUATION/STATUS.** The project faculty intended to devote most of its project time this past semester to writing and testing the materials to be used in the fall of '73; but, it soon became apparent that this was a conservative estimate of the time needed. Some of the materials for Mathematical, Atomic, and Astro-Physics were actually used by eighteen students.

The instructional procedure was:

1. Provide students with a unit study guide including an introduction, objectives and procedures for accomplishing said objectives within the given week.
2. Allow the prepared student to request a test immediately administered and evaluated by the instructor.
3. Allow the student with sufficient knowledge to move on to the next unit. If the student did not pass the test on the first trial, he was required to "recycle" elements in the unit which he and his instructor decided were the source of difficulty.

Personalized student assistance and testing time was available from instructors during specified hours three times weekly in a room set aside for this purpose.

Project faculty observations indicate that students are reacting favorably in that they have expressed interest in projected courses to be offered in fall, '73; the mode of instruction makes individual student needs evident to the instructor; it is easy to lose contact with a student, especially one who procrastinates; the system takes more time to administer than anticipated (this should improve with experience and organization); bookkeeping is extremely important; and, it is important to have a special reading room with isolated testing carrels.

External consultant Dr. Clifford Swartz, a visiting professor from the Individualized Science Instructional System expressed concern for the material's high level of sophistication. He felt that the level of expected performance was higher than is attainable by many students of the same age as the courses appeared to him as dealing mainly with formal abstractions, rather than accompanying theory with some review of phenomenology as he would suggest; but this observation is countered by the persistence of student interest in PSI, which can perhaps be attributed to Dr. Swartz's acknowledgement that "I was impressed with what you have already done on the project. . . The (assignment sheets) that you have done are very explicit and complete." (This was written scarcely one month after the beginning of the project.)

Dr. Ben A. Green, Jr., staff scientist of the Educational Research Center at the Massachusetts Institute of Technology, another consultant, commented on the pedagogical quality of the materials. He suggested the testing of materials by one or two students, thereby safeguarding other students from inadequacies or errors in materials and providing guide and effective feedback to the writers.

There is a possibility that this project could be of interest to the entire university in that it allows for flexible admission and completion dates. Under this module system, a student may enter a course through regular admission channels even though the time at which he chooses to do so may not correspond to regular registration dates. This may be a desirable innovation in some departments.

Dr. Green suggested that PSI might be used in other colleges and universities for the same reasons that it has been adopted at ISU. The possibility that the study guides might be published or shared with instructors in other institutions should make the authors aware of the

scrutiny the guides might undergo, thus, influencing the quality of the materials. In the sense that this project is the first attempt in adapting PSI to upper division courses, the ISU Physics Department may be perceived as being innovative on the national scene.

Given additional funding, the plans for this project include development of PSI packages for remaining traditional and career oriented courses during the next year and restructuring of the courses antecedent to the upper level program. A viable Physics program will be available without excessive demands on department resources when these steps are completed.

**PROJECT TITLE:** A Core Curriculum for Music Education Majors at Illinois State University

**PROJECT FACULTY:** Fred Omer, Paul Rosene, Duncan Miller and Eunice Boardman Meske

**DEPARTMENT:** Music

**DESCRIPTION.** This project grew out of a belief that the program in Music Education was inadequate because it fragmented a student's preparation into "cells" concerning discrete aspects of the teaching tasks. Problems dealing with educational psychology, human growth and development, pedagogy, and musical skills were encountered separately, thus leaving the student to synthesize these components into an understanding of the teaching act. Music itself had seven distinct courses which were either required or recommended for Music Education majors in addition to two prerequisite courses. Added to these was the general education of the Music teacher. Therefore, the stated purpose of this project was to design a curriculum which would integrate the instructional format and reduce the number of hours required while hopefully improving the quality of pedagogy for Music Education majors.

In the fall semester of 1972, Dr. Eunice Boardman Meske, a nationally recognized authority in Music Education, was recruited to begin working with the ISU faculty in the development of a total revision of the Music Education curriculum, which would be implemented in the fall of '73. Initial efforts were addressed to the problems of familiarization with the existing program and the plans the Music Education faculty had developed the previous year. Under Meske, a number of meetings were held which resulted in an identification of the tasks to be performed. Committees formed for each task were:

1. **Competencies Committee:** Their duties were to compile and synthesize those educational objectives for Music Education majors which had been previously identified, identify any which had been omitted, and prepare a final listing.
2. **Evaluation Committee:** Their objective was to devise ways to test achievement of teaching competency.
3. **"Housekeeping" Committee:** Their responsibility was to handle details related to catalog changes, scheduling, reservation of classroom space, and other assorted logistical issues.
4. **Questionnaire Committee:** They were to design and circulate a questionnaire intended to elicit perceptions of recent Music Education graduates on the quality of their preparation for teaching.
5. **Program Committee:** They were to research Music programs in other schools through documents and personal contacts for the purpose of identifying alternative modes of instruction which might be applicable to the proposed core.

In January, these committees were replaced by a single working committee composed of the faculty listed above. The tasks for this

group were much the same as those of the multi-committee structure throughout most of the spring semester '73. It was not until the latter part of the semester that the goals were revised downward in favor of a "partial core" to be implemented in the fall semester '73.

As a result of time limitations and scheduling complications, the concept of the core is no longer defined as an integration of experiences within a block of time where all students are available ten hours per week for possible core instruction in flexible situations. Instead, the activities have been directed toward the development of teaching processes for future core experience, which are designed to explore alternatives to the traditional demonstration-discussion approach, including the preparation of packaged learning materials, video tapes, audio tapes, and other supportive materials. This is the team's task during the summer months.

**EVALUATION/STATUS.** The accomplishments of the project to date are: (1) the identification of essential teaching competencies; (2) a partial listing of instructional objectives; (3) the development of a proposal for the cooperative inauguration of music laboratories in the two campus laboratory schools; and (4) the investigation of alternative modes of instruction which will evolve into a course outline and syllabus, which should provide the structure for the original tasks.

These accomplishments, although meager when compared to the original objectives, represent significant program changes; but, in light of the obstacles which had to be overcome during the project it is surprising that even this moderate amount of progress was made. Principal among these barriers was the faculty resistance to change and the lack of administrative support at the departmental level.

With a few minor modifications, the curriculum in Music Education during the fall of '73 is expected to be much like that of the preceding semesters. The concept of the core has not been abandoned, and efforts will be made to obtain funding to continue planning and development.



**PROJECT TITLE:** Evaluation of Educational Innovation

**PROJECT FACULTY/STAFF:** Ronald Hallinski, Eugene Jabker, Elmer Lemke, and Tse-Kla Tcheng

**UNIT:** Measurement and Evaluation Service

**DESCRIPTION.** This project was funded through the Educational Innovation Program to provide for the formative and summative evaluation of the remaining 34 projects funded under that program. Formative evaluation is concerned with the developmental aspects of a project and is in essence a series of internal feedback loops which results in sequential modifications. Presumably all instructional and curriculum efforts contain some provisions for formative evaluation--whether or not the design is formally explicated. By contrast, summative evaluation is not developmental. It is concerned with the adequacy of an activity, project or program on a number of dimensions and provides input data to the decision-making process regarding adoption and support. One of its major characteristics is the gathering of empirical evidence. Whereas both forms of evaluation require sensitivity and honesty, summative evaluations also require independence and impartiality.

The projects which were funded and which were to be evaluated can be classified into four major categories: (1) Planning; (2) Development; (3) Evaluation; and (4) Implementation. Because of the divergence of purpose represented by these various projects, no singular form of evaluative evidence would be sufficient in all cases. As a result, information was gathered through a variety of means and sources which included (1) reports of off-campus evaluators, (2) questionnaire surveys, (3) interviews, (4) standardized and course examinations, (5) visitations and observational notes, (6) project proposal, (7) university records, (8) student course evaluation instruments, and (9) formal reports submitted by some projects. Different combinations were available for the various projects. However, with few exceptions, a final taped interview was held with the participants in each project to obtain their perceptions of the major accomplishments and disappointments related to the project, as well as the future direction the project should take. Typescripts were made of each interview and were used as a major source of information.

Associated with the evaluation function were a number of additional related services and activities engaged in, such as (1) reviewing project proposals, (2) meeting with project faculty to help clarify objectives, (3) designing formative and summative evaluation procedures, (4) designing questionnaire and attitudinal measures, (5) coding data and placing it in machine-readable form, (6) processing data through the scanner and the computer, (7) retrieving data from university record files and (8) writing final reports.

An institutional study of student perceptions, attitudes and expectations in relationship to their educational experience at ISU was undertaken as an adjunct activity of this project. Approximately 4000 ISU students were surveyed. The particular measures selected and adapted for the survey instrument were taken from the Higher Education Measurement and Evaluation Kit prepared at the Center for the Study of Evaluation, UCLA Graduate School, under the direction of C. Robert Pace. The purpose of the descriptive study was to provide a normative base for the determination of changes

occurring over time as a result of the innovative practices being implemented in the educational program. A principal feature of the study was an attempt to determine the perception of ISU students regarding their actual progress and expected progress toward the attainment of broad educational objectives. The objectives dealt with four major areas of student development: Vocational, Humanistic, Critical Thinking, and Human Relations. Because of the length of the study the results will be distributed by the Measurement and Evaluation Service in a separate report.

EVALUATION/STATUS. A final report was prepared for each EIP project. Copies were distributed to the Dean of Undergraduate Instruction and to the principal faculty member involved with each project. These reports were used as input data into the review process for FY74 EIP proposals and served as the basis for the abstracts which appear in Part I of this publication.

**PROJECT TITLE:** Program Improvement in Professional Education [Secondary]

**PROJECT FACULTY:** Larry Kennedy, Michael Lorber and Harry Lovelass

**DEPARTMENT:** Curriculum and Instruction

**DESCRIPTION.** The Professional Sequence for Secondary Teachers represents a redesigning of secondary level professional education courses for the 1600-2000 junior level preservice students at ISU. The traditional professional education program has undergone a major restructuring of its basic organizational plan with respect to: 1) the identification of specified instructional objectives as the base for a competency-oriented program; 2) the movement toward self-pacing and individualized instruction; 3) the pattern of instructor-student interaction; and 4) the level of usage of instructional technology.

The purpose of the present project was to improve the existing Professional Sequence program through increased technological sophistication of the present system for monitoring student educational progress and the development of additional multi-sensory self-instructional materials. The specific objectives of the project relating to the development of instructional materials were:

1. Identification of current status of media availability in the Professional Sequence instructional packages.
2. Identification of specific existing instructional packages for inclusion of multi-media learning activities.
3. Preparation of multi-media learning activities for existing instructional packages.
4. Identification of new instructional packages and the need for the construction of new packages.
5. Preparation of multi-media learning activities for new instructional packages.
6. Examination and rewriting of objective tests as necessary.
7. Field testing of selected instructional packages.

The major thrust of this project was intended to be an extension of the ongoing process of constant evaluation and development of the instructional packages included in the Sequence. For example, during the past year ten faculty members worked on the revision of 53 instructional packages. Of these, 16 were significantly revised.

**EVALUATION/STATUS.** At the beginning of the fall semester the extent of media availability in the Professional Sequence instructional packages was assessed. Of 320 learning activities, approximately 20 percent were categorized as audio-visual, i.e. tape-slide, film, audio tape, filmstrip or video tape. Audio tapes comprised one-half of the media materials. As a result of the project, 19 tape-slide presentations were developed for both existing and new instructional packages. A sample of the titles includes (1) Individualized Instruction - Problems and Solutions; (2) Screening, Examining, and Programming for Mentally Gifted Pupils; (3) Recognizing Individual Differences - The Slow Learner; (4) Reporting Student Progress; (5) What Research

says about Class Organization for Instruction; and (6) Professional Sequence Orientation for Students.

Fifty-eight students worked with the new instructional packages which contained these tape-slide presentations. There was almost unanimous agreement that (1) the instructional objectives were clear, (2) the instructional objectives, learning activities and test questions were appropriately related, (3) the learning activities promoted efficient learning, (4) the subject matter was not trivial, and (5) the instructional packages provided a satisfactory learning experience. Somewhat surprisingly, only one-fourth of the students chose to view the tape-slide presentations. The remainder chose an alternative reading activity which was equivalent in content. However, all students that did view the audio-visual materials expressed satisfaction with the quality of the learning experience. It appears that students are strongly oriented to reading as the principal vehicle through which they gain information. What is needed is a convincing demonstration that the use of multi-sensory instructional materials does in fact promote more efficient learning.

The present computerized system for monitoring the educational progress of students in the Sequence was modified to be compatible with university computer data files and to provide printed output which would better communicate information to the student. With the modifications, the system for the Sequence can now accept registration data directly from the official university data base, calculate course marks for the number of registered hours and work completed, and then put this information back into the university file via computer. This last feature eliminates the need to handle approximately 2000 grade cards manually.

With regard to the student printout, the changes which were made included (1) providing space to accommodate more instructional packages, (2) increasing the potential for the number of messages to be communicated to the student, particularly whether or not requirements for student teaching had been completed, and (3) displaying the amount of credit awarded for work completed, and (4) making it more self-explanatory. The emphasis in making these modifications has been to reduce the large amounts of administrative record keeping as well as the myriad of procedural questions students ask. It is expected that these modifications will provide faculty with more time to work with students on more substantive issues.

Future proposals call for still additional alternative modes of instruction in the form of mini-courses. These courses are intended to help students to integrate the subject matter of the Professional Sequence, and to study related issues of special interest in more depth.

**PROJECT TITLE: Competency Based Instruction [CBI]**

**PROJECT FACULTY: Franzie Loepp, Larry Miller, Bessie Hackett, Joe Talkington, Claude Bell, John Johnston, Fred Kagy, Jacqueline Karch, and Charlotte Upton**

**DEPARTMENT: Home Economics and Industrial Technology [HEIT]**

**DESCRIPTION.** The Competency Based Instructional project (CBI) was developed with the major objective to effect curriculum change in the Department of Home Economics and Industrial Technology. The project was designed in response to three main areas of curriculum concern. They were: 1) a need to eliminate duplication within the combined departments of Home Economics and Industrial Technology, 2) a need to adjust offerings to meet new trends in teacher education, and 3) a need to better coordinate interdepartmental efforts associated with the professional education courses needed by HEIT education majors. More specifically, both departments offer courses in evaluation, curriculum development, philosophy and organization, and improvement of instruction. In addition, these course offerings were developed to meet credit hour certification requirements. However, the trend in Illinois, and across the nation, appears to be in the direction of competency based teacher certification. Finally, portions of the content of these courses are covered in Education 200, 228, 231, 235 and Psychology 115, resulting in a duplication of efforts at the expense of other content important to areas of HEIT.

The project is divided into two phases. Phase I, for which funds were allocated, was completed June 30, 1973. The objectives of Phase I were:

1. The identification of professional competencies needed by students in the undergraduate education program.
2. The conceptualization of the above competencies into a hierarchical structure.
3. The translation of the hierarchical structure into syllabi for a number of instructional packages of yet to be determined length.
4. The initiation of new courses or mini-courses that may replace the present courses.
5. The design and development of sample teaching materials and evaluation strategies which may be used successfully with existing facilities and personnel.

The procedures for Phase I can be broken down into six major areas: literature search, interaction with similar projects, training of the CBI staff, development of a pilot course, promotion and dissemination, and evaluation. The analysis resulted in a complete description of each course in performance terms. A four-level competency model was then adopted which includes three basic clusters: organizing, interacting, and being a professional. Under these clusters are twelve basic competencies: assessing learner needs and goals, managing the physical environment, setting goals and objectives, planning for teacher-student interaction, communication in the classroom, nurturing humanness in the classroom, instructing, managing learning, evaluation, gaining self-improvement, working with colleagues, and developing professional actions. Teams were then formed to develop the next two and more specific levels of the hierarchy, namely the competency components

and the performance objectives. The teams also prepared materials and developed the experimental course--Competencies for Teachers.

EVALUATION/STATUS. The major accomplishments of the project were the completion of a series of activities that provide a viable alternative to the teacher preparation sequence presently being offered in HEIT. In short the proposed sequence will consist of six offerings which will replace 14 existing courses. One of these offerings, Competencies for Teachers will be piloted in 1973 summer session and will replace HE 244, IT 201 and IT 305.

The HEIT faculty were surveyed near the end of the project to determine their willingness to actively pursue competency-based teacher education. Of the 61 questionnaires distributed, 57 percent were returned. Of those responding 61 percent favored a shift to competency-based teacher education courses in HEIT and 36 percent were undecided. Other results indicated that the respondents generally support the goals and objectives of the CBI project, and are willing to participate in a CBI program.

The major thrust of CBI Phase I was to analyze, improve and systematize the pre-service professional program for students who intend to become teachers of home economics or industrial technology. To demonstrate identified professional competencies, each student is expected to also exhibit technical expertise in one or more areas of the department. The major portion of the HEIT curriculum attempts to provide this technical expertise. Phase II of CBI will test, revise and implement outcomes of Phase I and extend curriculum development activity into the technical areas. These technical competencies will be identified and a hierarchy will be developed. Hopefully, a portion of the "core" technical competencies will be implemented during the spring semester, 1974. The rate of progress is dependent on the availability of funds.

**PROJECT TITLE:** The American Experience

**PROJECT FACULTY:** Joseph Grabill, Charles Bolton, Paul Holsinger and Mark Wyman

**DEPARTMENT:** History

**DESCRIPTION.** The conventional American History course is a two-semester course primarily for History majors, minors and general education students. For some time, the History Department has recognized that most general education students take but a single college semester of American History, hence studying only a portion of the history of our country. For this reason, a single semester comprehensive course which builds on high school knowledge is desirable. The American Experience was designed to meet that need.

The American Experience is a one-semester general education course in American History. It differs from the conventional survey of American History in that the principle of a general survey is replaced by tracing a key theme in American History.

The present theme for American Experience is "freedom." During the semester, students consider this topic at the various stages in our history. Using inductive methods, the nature of freedom is considered at different times for various groups. Hypotheses are posited and revised as evidence is accumulated. Finally, students develop an operational criterion by which to evaluate the amount of freedom people have experienced in American history.

As a result of the course, students are expected to critically evaluate the concept of freedom as it is embedded in American history. Thus, the objectives as they relate to the substantive aspects of the course are as follows:

1. Students will be able to conceptualize an abstraction, such as freedom, and relate it to phases of American History.
  2. Students will be able to state an argument and employ a balance of generalizations and specifics to support their argument.
  3. Students will be able to clearly and specifically relate the sources and material from this course to an argument.
- Also relative to the course, are the following non-substantive objectives:
4. Students will contribute to small discussion and project groups.
  5. Students will have an opportunity for personal interaction with the teacher.

In addition to its curricular contributions, this course provides a somewhat different approach to the problem of teaching large numbers of students while giving them adequate personal attention. While lecture is important in the overall student experience, the class is also divided into small groups for discussion and special projects. Depending upon the situation, professors or teaching assistants are responsible for

certain aspects of the instructional process (e.g., lectures, role playing, small group projects and discussions). Also, students have been encouraged to develop their inductive, creative, and expressive abilities to identify sources of data, and to set forth arguments and interpretations of the data. For example, in the first two weeks, students read In White America and were asked to induce overall principles and interpretations from that reading. After a semester of similar types of activity, students were examined to determine if they could critically analyze information and operationalize an abstract concept using the inductive approach.

EVALUATION/STATUS. A quasi-control group design was used to evaluate the American Experience course. That is, students in the American Experience Courses were compared with those in the more traditional courses on the basis of a pre-post course questionnaire. From the results of this questionnaire it is possible to infer that as a result of the American Experience course, students felt that (1) they had participated more, (2) personal needs associated with developing values and making critical judgments were met, and (3) they were more aware of contemporary social, economic, and political issues. In general, it is reasonable to infer from the data that the American Experience successfully involved the students, met perceived needs and appeared to develop critical thinking.

For many years, educators have been aware of the distinction between educational goals which stress factual information as opposed to those goals which stress development of analytical or critical thinking. The development of critical thought and the ability to conceptualize an abstraction were embedded in the objectives of this course. Some of the examinations were reviewed to determine what levels of thought were actually being stressed in this course. The test material of this course minimized factual information and stressed critical thinking and the conceptualization of an abstraction. Consider the following examination question as an example:

Develop an argument about the comparative freedom of the following groups of people: labor, women, blacks, businessmen (as represented by Silas Lapham). First, write a careful paragraph describing your current view of freedom. Especially show how it has evolved since the first exam. Second, list the four groups in the order of freedom experienced, and apply your definition systematically as you explain why you put them in the order you did.

A review of selected test performances indicates significant improvements from the beginning of the semester to the last test.

Because of the accomplishment of course objectives, indicated by student responses to questionnaires and review of examination performances, the American Experience can be seen as an interesting and viable means to the teaching and learning of American History.



**PROJECT TITLE: Humanities I and II**

**PROJECT FACULTY: Roy A. Austensen, Robert L. Duncan, W. Douglas Hartley, Herbert C. Sanders**

**COLLEGES: Arts and Science, and Fine Arts**

**DESCRIPTION.** Humanities I and II is a two semester, interdisciplinary course (ten semester hours). It is organized by historical periods, emphasizing the major achievements of each period from the perspectives of History, Literature, Art and Music. The purpose of the course is to show that the Humanities are related ways by which man expresses the meaning of his world and his experience. Anticipated student results of the course are a heightened appreciation of the Humanities derived from a knowledge of factual information, and an understanding of the relationships which exist among the content areas of History, Literature, Art and Music. While the course has been in operation for four years, resources were necessary for a reorganization which would provide for a greater integration among the four subjects comprising the course, and for the development of multi-media presentations to better illustrate the relationships which exist among these content areas.

Instruction consists of a series of coordinated lectures by four faculty members, each a specialist in one of the content areas. To further promote the interdisciplinary nature of the course, the lecture group is divided into four discussion sections with instructors meeting these sections on a rotating basis. The instructors meet weekly to plan the week's activities and to attend each other's lectures. A major requirement of the course is an independent paper in which the student is to demonstrate the ability to integrate his/her knowledge of History, Literature, Art and Music.

**EVALUATION/STATUS.** Numerous types of meaningful evaluation data were gathered for this sequence. These data were of both a statistical and non-statistical nature. However, all of it appears relatively free from bias and very supportive of the Humanities I and II sequence. A summary of the more cogent data follows.

Statistical Data. As part of the evaluation of Humanities I and II, the Educational Testing Service (ETS) Area Test in Humanities was administered to 115 ISU students enrolled in the sequence. The performance of these students was then compared with ETS national freshman norms. Sixty percent of the ISU students scored in the upper quarter of the ETS national norms, twenty-six percent scored in the second quarter, thirteen percent scored in the third quarter, and only one of the ISU students scored low enough to be included in the lower quarter of the national norms. The median score for ISU students was 500 compared with 418 for the ETS freshman norm group.

In addition to the Area Test in Humanities, a second ETS inventory, The Student Instructional Report (SIR) was used to evaluate the sequence. The ISU student report was

then compared with SIR national college norms. Students rated ISU course instruction, value of the course, and quality of the lectures much higher than SIR norms. Also, the ISU course was judged to be at the student's ability level, though the work load was judged to be heavier than the national average.

ISU students were also asked about their participation in humanities related activities. This information was then compared with responses for a national sample.\* Reported ISU student participation was significantly ( $p < .05$ ) higher than the national sample in Art, Music and Drama.

Non-Statistical Data. In addition to the statistical evaluation of the Humanities I and II sequence, Dr. Paul J. Olscamp of Syracuse University was used as an external evaluator for the project. He provided a written evaluation of the sequence. Selections from his evaluation follow:

During my stay I witnessed . . . a complete lecture on the Role of Death in Tolstoy, . . . a lecture on Determinism, Marx and Darwin, . . . and a multiple media presentation . . . illustrating the mutually supportive relationships of the painting, poetry, and music of the Romantic period . . . In addition, I discussed the course syllabus, textbooks, and the individual abilities of the lecturers, with approximately a dozen students from the course for about an hour.

Although the syllabus for the course is very detailed and precise, . . . I was surprised and very pleased to discover that the two lectures I witnessed on Thursday and Friday were the ones which, in the syllabus, were precisely scheduled for those days. I think that this demonstrates both careful and very precise planning.

In my fairly detailed discussion with the twelve students, there was unanimous agreement on their part that each of the four lecturers in the course worked diligently and carefully to prepare his materials and that the level of instruction in the course was among the highest they had ever experienced . . .

The skill and ingenuity with which several of the segments of the course which I examined were put together was enlightening indeed. To take an outstanding example, Professor Hartley discussed the Romantic period while the poetry of Wordsworth was being read, and while at the

\* Higher Education Measurement and Evaluation Kit, Higher Education Evaluation Program. C. Robert Pace, Director, UCLA: Center for the Study of Evaluation, 1971.

same time the paintings of Constable were flashing on two screens and the music of Berlioz was playing softly in the background. I have never witnessed a demonstration which more forcefully placed before me the mutually supportive natures of the major arts of the Romantic or any other period. I am sure that henceforth if anyone should ask me to define romanticism, I shall refer them to these three examples.

I was impressed by the amount of work which is involved in the grading of the students . . . A central purpose of the weekly tests is to demonstrate for the professor that the student has been able to integrate "his knowledge of history, literature, art, and music." The demonstration of romanticism illustrates and exhibits precisely this sort of integrative ability on the part of the faculty . . . Certainly it would be difficult to envision a more thorough review of the student's ability. I was surprised that the four full time faculty members involved were able to carry full loads in addition to this, including this course as a part of their weekly routine.

It is obvious that the development of such courses requires patience and coherence of effort over a considerable period of time. I know of no other similar course anywhere where the principal instructors have been together for such a prolonged period of time. The refinement of the final product which is the result of this cumulative experience is evident upon first sight.

**TITLE: Passport Credit for Aesthetic Experiences**

**PROJECT FACULTY: Gary R. Sudano**

**COLLEGE: Fine Arts**

**DESCRIPTION.** The emotional component of human experience has always been one of the specific subject matters of the arts. It might be argued that emotion is the component which transforms the mechanical into the artistic. However, despite its pervasiveness and the recognition that affective outcomes are legitimate objectives of education, changes in emotional reactions have seldom been accepted as the major product of an educational experience. In this project, however, affective changes were given central importance with only secondary consideration given to cognitive changes.

The goal of the program was to provide varied non-classroom experiences designed to increase aesthetic awareness and discrimination. It was expected that through these experiences students' attitudes about the arts would be changed, awareness and appreciation would be expanded, and sensitivity to artistic efforts would be increased. It was hoped that through these varied experiences a greater insight into the human condition would develop.

Two hundred-eleven students representing most disciplines on campus were enrolled in the course which was scheduled to meet once each week in a large lecture hall. In this meeting the instructor identified selected on-campus artistic events which would provide "passport credit" for the course. Locations, times, availability of tickets, and costs, as well as mechanical details regarding the collection of passports were given. In order to obtain the one hour of credit for the course, each student was expected to attend a minimum of 15 artistic events from the areas of music, theatre, dance, film, and exhibitions. Of the 190 students who were still enrolled at the end of the course only 8 students had not attended the minimum of 15 events and thus did not receive a passing credit for the course.

The events which were selected for credit had several characteristics. First of all they were all on-campus events, since it would have been virtually impossible to verify attendance at other sites. They were also scheduled during the evening hours to facilitate attendance. And third was the expected quality of the performance and its relative novelty for the students in the course. As a result, a program of electronic music and modern dance was included. Performances by visiting artists were selected as well as presentations by university students. During each month of the semester presentations were identified so that a balanced program was available to students.

Although the announcement of events at the weekly class meeting was the major agenda item, this was also the occasion for discussions of the events either past or future. These presentations were made by the instructor, graduate assistants, artists, or directors of events.

The purpose of these presentations was to provide insight and explanation of the event itself. Although usually brief they helped explain or anticipate the event. On several occasions a brief discussion of audience etiquette was provided.

**EVALUATION/STATUS.** To evaluate the objective of the course an opinionnaire was administered during the last week of April. This questionnaire attempted to obtain feedback about frequency of attendance, perceived value, affective reactions of events, and certain perceptions about the mechanics of the course. Findings indicated that only 50 percent of the students regularly attended the weekly class meeting whereas almost 96 percent of the students enrolled attended at least 15 events. Further, those who completed the questionnaire indicated that they had attended over 80 percent of the weekly class meetings. Thus, there seems to have been a "hard core" of regulars at these meetings despite the fact that credit was not generally given for attending them. The respondents also indicated that they had attended a substantial number of additional non-credit events. They attributed the motive for this non-credit attendance to the course. Interestingly enough, those students who had attended the most events at the time of the administration of the questionnaire were also those students who had attended the most non-credit events.

There was also an almost universal approval of the course and the events which were attended. In a question which was designed to provide free comments about the course, no statements were made which in any way suggested a negative reaction. Respondents indicated that they have recommended the course to friends, and that they wished the course to continue as it had been conducted. That the course had apparently obtained its objectives was manifested frequently in statements which clearly suggest that the students' sensitivity and awareness had been expanded and that students had been made knowledgeable about on-campus events and attended specific events as a result of the class. In this sense the course has apparently succeeded admirably.

The course has been scheduled to continue in the next academic year, and students may acquire up to three credit hours through an accumulative registration over three semesters. The only projected modification of the course is the revision of the weekly class meeting. This will probably include additional presentations by guest artists, greater elaboration of some of the characteristics of artistic events, and the possible addition of a minimal number of credit generating performances during the class meeting.

**PROJECT TITLE:** Applied Mathematics

**PROJECT FACULTY:** Robert Ritt, Richard Bennett, Kenneth Berk, Rodney Forcade,  
Robert Hathway, David Mescheloff and James Parr

**DEPARTMENT:** Mathematics

**DESCRIPTION.** The purpose of this project was to determine if there were more effective ways of improving (1) the mathematics education of non-mathematics majors, and (2) the knowledge of the applications of mathematics for mathematics majors. Four separate approaches were employed: (1) modular units for instruction in Applied Mathematics were prepared; (2) one section of Math 136 (Calculus with Analytic Geometry II) was offered as a section intended for students in the Physical Sciences; (3) one section of Math 120 (Algebra for Social Sciences and Business) was offered with a revised curriculum and at a more advanced level, and (4) selected students enrolled in Math 110 (Modern College Algebra with Trigonometry) were given programmed instruction in that material.

Modular Units in Applied Mathematics

Modules were constructed for problems in Biology, Physics, Chemistry, Social Science, and Economics. The following format was used for the modules:

1. The concept of the discipline, e.g. acceleration in Physics, population growth in Biology, marginal costs in Economics, etc., is explained.
2. The concept is translated into mathematical terminology.
3. The problem is described in the terms of the appropriate discipline. For example, in Physics the problem might be, "If you know the position of a particle, how can you determine its velocity?" or, "If you know the velocity, how can you determine the acceleration?"
4. The structure of the problem-solving technique is taught in three steps:
  - (a) A sequence of sample problems which carefully describes the procedures and solutions is studied.
  - (b) The student works most of a set of programmed problems independently.
  - (c) The student demonstrates his mastery of the module's principles by solving a third set of problems.
5. The student is given a compilation of reference books and materials which he may use for further study of the module's principles if necessary.

Completion of the modules is expected to provide traditional academic credit, although the exact amount has not been determined.

#### Special Section of Math 136

A special section of Calculus with Analytic Geometry II was redesigned to be of particular interest to people in the Physical Sciences. For the most part students in this course were Chemistry majors. The course was characterized by an increased use of analog and digital computers, and the extensive use of mathematical tables in lieu of calculations. In addition there were special sections on the applications of trigonometric functions to various problems. The primary difference between this and the standard course was the lessened importance of the calculation process.

#### Special Section of Math 120

In this course, Algebra for Social Sciences and Business students who had an extensive background in mathematics were provided advanced instruction. The express purpose of this course was the teaching of concepts in mathematics beyond those normally given.

#### Programmed Instruction in Math 110

A program text and commercially prepared audio tapes were made available to the students in this course, Modern College Algebra with Trigonometry. The basic purpose of this course is to produce efficiency in certain calculations. It is not a course in the theory of mathematics; rather the skills are stressed. Aside from certain few limitations, namely scheduled lectures and tests, the students were allowed to proceed at their own pace. The long-range objective of this mode of instruction is to give students a chance to obtain the necessary skills in calculation and then move on as quickly as possible to more sophisticated mathematics.

**EVALUATION/STATUS.** The four components of this project are at different stages of development. Drafts of the modules have been completed; however, they have not been student tested. The three courses, Math 110, 120, and 136, were offered during the spring semester of 1973. Although systematic analyses of the effects of these three courses has not been completed, subjective reactions of the students suggest that these innovations will become part of the program in the Department of Mathematics. Of particular interest is the relatively small contribution that the audio tapes made to achievement in the programmed offerings. Apparently the text by itself was sufficient to provide the expected achievement. Through these efforts, the Department of Mathematics has apparently bridged what it perceives to be a gap in the mathematics background and training of its own majors and those in other departments.

**PROJECT TITLE:** The Production of an Instructional Package to Train Teachers to develop Pupil Thinking Through Structure-of-Intellect Activities [SOI]

**PROJECT FACULTY:** George W. Etheridge, Robert Hedges and Richard Youngs

**DEPARTMENT:** Curriculum and Instruction

**DESCRIPTION.** The lack of understanding of basic human intellectual abilities is a major deterrent to efforts at individualization of instruction. The purpose of this project was to develop an instructional sequence and related instructional materials to train teacher candidates to individualize the instruction of children according to the child's intellectual ability and learning style. The project was an outgrowth of a sponsored research effort by Dr. Richard Youngs. That effort developed prototype materials for a training program which used Guilford's Structure-of-Intellect model to assess human abilities. This project particularized those research and developmental efforts for use in the elementary education core program.

An instructional package was developed which includes a monograph, slides and video tapes of activities, example activities, overlays, manipulative materials and reference books. The central element of the package is the monograph which serves to make the package independent of the developers and to place it on a quasi self-instructional basis. The instructional sequence includes the following stages:

During the first stage of the instruction, teacher candidates will study the Structure-of-Intellect model. They will then view colored slides and video tapes of children engaged in learning activities and classify the activities according to the SOI abilities required. Teacher candidates will also classify games, instructional materials, and learning tasks according to the SOI model.

During the second stage of instruction, teacher candidates will be taught how to assess the SOI intellectual abilities of children. Decision making flow charts will be used to assess a child's ability profile. Teacher candidates will also practice their SOI assessment skills on written case studies, video tapes and finally live children. It is felt that teachers should rely on their own psychometric skills to obtain information about student abilities. This information would be based on classroom observations and data in the personal folder.

During the third stage of instruction, teacher candidates will both identify and develop instructional materials for remediating various SOI abilities. Each teacher candidate will be provided an opportunity to work with a child for approximately 10 hours over a



period of two weeks to clarify and internalize the techniques of individualizing instruction.

**EVALUATION/STATUS.** Teacher candidates completing the instructional sequence and materials should have skills in four areas:

1. Knowledge      Teacher candidates will be able to demonstrate an understanding of human abilities as described by the Structure-of-Intellect model.
2. Diagnostics    Teacher candidates will be able to use the Structure-of-Intellect model to identify some of the intellectual strengths and weaknesses for a given child.
3. Curriculum     Teacher candidates will be able to use the Structure-of-Intellect model to identify existing instructional materials or to develop new instructional materials which capitalize on the intellectual strengths of a given child.
4. Teaching       Teacher candidates will be able to use the Structure-of-Intellect model to identify or develop instructional strategies which capitalize on the intellectual strengths of a given child.

It still remains to be demonstrated that when these materials are implemented on a large scale basis that preservice teachers who are so instructed can reliably perform the diagnostic and prescriptive functions. Ten duplicates of the instructional package have been developed and in the fall of 1973 the SOI instructional sequence will be incorporated on a pilot basis into the Communication and Science core of the Elementary Education curriculum. Feedback from this implementation should result in the refinement of the diagnostic and prescriptive techniques.

A major derivative of the project was the momentum generated, among ISU faculty and teachers in neighboring school districts, for the concept of individualizing instruction via the SOI model. This was accomplished through seminars, training sessions, class visitations and field trials for the prototype materials.

There is also discussion of expanding the SOI model into the areas of reading and language arts and using the taxonomic structure as a synthesizer for the variety of curricular materials in these areas.

**PROJECT TITLE: A Feasibility Study Concerning Standardizing Content and Evaluation in the Department's General Education Course: American National Government and Politics**

**PROJECT FACULTY: Fredrick J. Roberts**

**DEPARTMENT: Political Science**

**DESCRIPTION.** American National Government and Politics (POS 105), a course offered by the Department of Political Science, is a large enrollment multisection introductory course which fulfills the general education requirements. It also serves as a substitute for the examination on the United States and State of Illinois Constitutions and the test on flag use required of all students prior to graduation, and is a required course for majors in Political Science. Almost all Illinois State University students eventually take this course to satisfy one of the above three conditions. The course, therefore, has had an extremely diverse and frequently unresponsive clientele. More than half the students in an average section have exercised the credit/no credit grading option, and a substantial portion are repeating the course as a result of previous failure. A majority of the department's faculty have been involved in the course and have offered a wide range of subject matter, orientation, and format. Despite a heavy departmental commitment of teaching time to a course involving about half of its total students, the success of the course would, unfortunately, appear to be marginal when measured by impact on the average student's knowledge, interest and attitudes. Students' evaluations are systematically lower for given faculty members in this course than in others, and the course has developed what seems to be an unwarranted reputation for difficulty. The preceding comments, abstracted from the project proposal, represent a refreshing level of candor. It is an unusual event in higher education when a department publicly acknowledges its problems with one of its "bread and butter" courses, and it is equally unusual when systematic efforts are proposed for the study of these problems.

The stated objectives of this study were to: (1) survey and evaluate content, practices and procedures in the various sections of the course; (2) evaluate reliability and validity of current proficiency tests; (3) collect and analyze data regarding student characteristics in the various sections; (4) develop and use instruments to measure student-teacher interaction; and (5) develop alternative solutions to the problems and present these for departmental consideration.

One graduate assistant, six senior majors in Political Science and approximately ten students in an honor section of the course assisted the director in collecting the data necessary to answer the questions of the project. The group of seniors acted as observers, recorders, and eventually evaluators of each section of the course. They helped prepare a formal comparative evaluation instrument and also helped prepare multiple choice items used in the pre-post "fact" test. They also served as part of the standardizing group for this fact test, and they acted as "go-betweens" in collecting information from the individual sections' instructors, e.g., syllabi, class rosters, grades and enrollment data.

The honor students also served as observers in the various sections. As part of the work for their class, they helped prepare an independent

evaluation instrument and completed studies on teacher performance, student attitudes toward the course, and the quality of the textbooks. One hundred students in the regular sections were randomly sampled and interviewed by the honor students to obtain greater details concerning attitudes toward the course, evaluation of the quality of the instruction, suggestions for improving the format, materials and style of instruction. In addition to the data provided by the student assistants, attitude questionnaires were administered at the beginning of the course, the department teaching evaluation questionnaire was administered at the end of the course, and data from the students' records, e.g. ACT, cumulative grade point average, and whether or not the students were on a grade or a pass/fail option, were gathered. The result of this intensive and extensive effort on the part of all involved has produced a massive body of data which when analyzed will provide the basis for the formulation of alternatives to the present course structure.

**EVALUATION/STATUS.** The value of this effort will be in the extent and degree to which changes will be affected in grading, instructional procedures, content, student assignment to courses, syllabus requirements, revision of the Constitution examination, and the department evaluation. It is one thing to recognize your faults, which may or may not be universally perceived by all members of the department, but it is a completely different matter to remedy them. Faculty autonomy and professional prerogative have a sufficiently solid history that the simple presentation of fact with argument may or may not be sufficient to implement the changes which the findings would suggest. This, then, is the major task for the forthcoming year. In addition to the changes perceived as necessary, it is anticipated that certain mechanical and logistical changes may be required.

One of the possible unintended outcomes of this particular project is the application of this evaluation model to every department in the university which has multi-section large enrollment courses. Using a relatively small budget primarily for personal services it may be possible to extend this procedure to other problems of a similar nature and importance. This, of course, is a question that will be considered with great interest, especially in the degree to which changes are in fact implemented. At the present time, the major source of evaluative input for instructor effectiveness is student evaluations. It is recognized that this is only one possible input among many. This project has suggested other possibilities.

**PROJECT TITLES: Audio-Tutorial Laboratory in Agriculture  
Cooperative Education Program in Agriculture**

**PROJECT FACULTY: Frederick Fuess, Wilbur Chrudimsky, and James McBee, Jr.**

**DEPARTMENT: Agriculture**

Two separate projects were funded in the Department of Agriculture from EIP monies. Although uniquely different in their design and procedures, both projects had a similar goal: to increase the number of program options for students in Agriculture. The characteristics of each program will be presented separately.

**Audio-Tutorial Laboratory in Agriculture**

**DESCRIPTION.** Two courses in the department, Grain and Soybean Production (AGR 250) and Soil Science (AGR 157), have similar instructional formats and similar problems. Lectures are provided to the total enrollment in a large group session, with subsequent division into smaller groups for laboratory sessions. Since both courses use the same laboratory facility, the size of each section is limited by the number of stations. Thus, the total enrollment in the course is limited by the number of laboratory sections which an instructor has as part of his instructional load. Due to these restrictions, both courses have been closed to some students who wished to be admitted in the past. It was proposed that the development of an Audio-Tutorial Laboratory would solve some of these problems. The objectives of the project were:

1. To provide additional flexible laboratory facilities and thus provide for increased enrollment in the courses served by the audio-tutorial laboratory.
2. To combine the use of sound tape recordings, 2x2 colored slides, film loops, diagrams and live materials to provide a great variety of learning experiences which will be integrated into a logical, systematic program of instruction.
3. To provide students with the opportunity to set their own pace to achieve mastery of the learning experience.
4. To provide each student with a laboratory experience which is both individualized and uniform.

There were four identifiable, though not necessarily functional, separate steps in the developmental process. First, Dr. Fuess and Dr. Chrudimsky made on site visits to three campuses where there were operational audio-tutorial laboratories in Agriculture, and spoke with a consultant, who was a recognized specialist regarding audio-tutorial laboratory operations. The second step included the identification of hardware and materials and the requisition procedure necessary to procure them. Third, was the development of scripts, audio tapes, and 2x2 slides, which would form the content for each laboratory session. And finally, it was necessary to modify a classroom to hold the laboratory equipment and "put it all together."

**EVALUATION/STATUS.** The materials and hardware for the Audio-Tutorial Laboratory have been completed and will be pilot tested in the summer of '73. The following year the first full-scale usage of the laboratory will take place, and this is fully expected to result in many revisions in the

content presentation. Some revisions were already forced on the authors as a result of the translation from the personal to the electronic mode of instruction. There were deletions, revisions, new selections, and modal translations. The process of developing a more permanent instructional continuum forced the authors to ask themselves about their objectives.

The laboratory is expected to be available twenty to twenty-five hours per week at the outset. A department faculty member or undergraduate teaching assistant is scheduled to be present so that someone is always available to provide assistance. Thus, through appropriate scheduling and use of the audio-tutorial laboratory it should be possible to accommodate forty to sixty more students in each course.

#### Cooperative Education Program in Agriculture

DESCRIPTION. This was a feasibility and planning study for the initiation of the Cooperative Education Program in Agriculture. The objectives of the project were:

1. To determine the degree of interest and possible participation in such a program by students in the Department of Agriculture.
2. To determine the interest and willingness to provide employment by potential cooperating employers.

Dr. McBee, chairman of the Department of Agriculture, had previous experience in cooperative education programs prior to his arrival at ISU. He assumed the responsibility for this project and made contact with over forty potential employers. He also spent time with the director of the Cooperative Education Program at Purdue University and talked extensively with him about the nature and scope of their program.

EVALUATION/STATUS. At present the project is at least temporarily halted. One of the major problems is the seasonal quality of work in agriculture. Although many could provide employment during the summer, few employers were willing to commit themselves to positions in either the fall or spring.

It is one of the tenets of cooperative education that there be a total spectrum of responsibilities in employment, which would illustrate and reinforce some of the classroom principles. These principles are not necessarily seasonal.

From the experience of the program at Purdue, it was learned that placement had to be made nationally rather than locally. If this plan were to be duplicated at ISU, it would represent a major travel cost, which might not have a corresponding benefit.

At present it is planned to pursue the exploration and development of employment possibilities on a non-project basis.

**PROJECT TITLE:** Performance Evaluation of Format, Instruction, Teaching Strategies, and Materials in the Principles of Economics Course Sequence

**PROJECT FACULTY:** Bernard McCarney, John Chizmar, and Douglas Poe

**DEPARTMENT:** Economics

**DESCRIPTION.** The Principles of Economics two-semester course sequence enrolls about 3000 students per year and utilizes in excess of 50 percent of departmental faculty. Since the Principles sequence is crucial to the Economics department's curriculum, it is imperative that its instruction be conducted effectively. In March, 1971, the Department of Economics adopted the following policy for the Principles of Economics courses at ISU.

- A. Economics 100 (Principles I) will cover the concepts of both microeconomics and macroeconomics in about equal proportion, with little graphic analysis. The following concepts will be included:
  - (1) Economics As a Science, Scientific Method
  - (2) The Central Questions Facing an Economic Society
  - (3) Comparative Economic Systems
  - (4) Supply, Demand, and Price
  - (5) Market Structures, Including Factor Markets
  - (6) The Public Sector
  - (7) National Income Analysis
  - (8) Money and Banking
  - (9) International Trade
- B. Economics 101 (Principles II) will be devoted to a rigorous theoretical treatment of basic concepts of micro- and macroeconomics.
- C. Each instructor will be permitted complete freedom in selection of teaching materials and methods in the fulfillment of A and B above.

In effect since the fall semester, 1971, the format varies considerably with the usual arrangements for Principles courses. Most students in a traditional introductory economics course sequence are exposed to a micro-macro, or a macro-micro semester sequence of approximately the same degree of formal development. Each of the two semesters typically limits the concept coverage to approximately one-half of a standard textbook. Also, many institutions require that all instruction in the course sequence follow a uniform text.

The traditional strategy for teaching economics generally requires the definition and development of formal theoretical concepts. When these concepts have been developed, they are generally presented in an illustrative application of the concept. One of the shortcomings of this type of presentation is the extensive elaboration of the theoretical concepts to the exclusion of relevant reference to real world phenomena, and it often unwittingly results in poor attitudes toward economic content and application.

The revised format at ISU allows for variation in teaching methods. This variation ranges from adoption of a text utilizing a less rigorous (but still formal) presentation to a more extreme departure from the formal, the "synergetic approach". The synergetic sequence at ISU has stipulated a less formal approach in the first semester, followed by a reiteration of basic concepts with more formal development in the second semester. The intuitive concepts can be used as a base by which to approach new ideas embedded in problematic contexts. As the sequence progresses, readings are drawn from problems of interest, and commentaries are designed to reaffirm and generate interest in economic problems.

This project is an empirical study of the effectiveness of revisions in the Principles of Economics course sequence. The questions investigated were: (1) Do ISU students learn economics? (2) How do ISU students completing the revised course sequence compare to known samples of students instructed by the basically traditional approaches? (3) What is the relative effectiveness of the different teaching strategies utilized at ISU?

Performance in the Principles course sequence has been measured by the "Hybrid" Test of Understanding of College Economics (TUCE).<sup>\*</sup> The 33 questions comprising the "Hybrid" were reviewed by members of the initial TUCE institute. In selecting the "Hybrid" TUCE questions, a deliberate attempt was made to omit questions that relied on too much technical detail. Further, the 33 questions are of three types: (1) Recognition and Understanding, which in principle could be answered by reference to a textbook; (2) Simple Application, which is defined as a question in which the student demonstrates that he can utilize the concept when its use is specified or clearly implied; and (3) Complex Application, which involves live problems and requires adaptation of knowledge to a new context.

The "Hybrid" TUCE was administered as a pre- and posttest to 13 classes of Principles 100 (8 classes) and Principles 101 (5 classes). The 13 classes were instructed by eight different teachers in the Department of Economics. In conjunction with the examinations, students were requested to complete an information and attitude survey which called for name and social security numbers for later matching. These instruments were administered by teams of graduate and undergraduate assistants in February and May, 1973.

EVALUATION/STATUS. The significant feature of this project was the utilization of a recognized measure of student achievement in economics. Initial statistical analysis of student performance on the "Hybrid" TUCE has been concerned with (1) overall performance, utilizing pre- and post-test scores, and (2) comparison with available external studies utilizing the "Hybrid" as a performance criterion. The statistical test employed, where possible, is the test for significance of difference of means.

The overall performance of ISU students completing Principles I and Principles II revealed significant improvement. The absolute gain of 5.35 correct answers in Economics 100 and 4.4 answers in Economics 101 produced a relative gain of 25 percent for each of the two semesters. A comparison with the results of an unpublished study involving 500 students attending other Illinois colleges indicate that the gain for the first course was relatively substantial, though no data was available for a comparison with the second course. However, comparisons with results available from other studies indicate that, at the very least, students in the two-semester sequence at ISU fare as well as students exposed to more traditional approaches. Thus, the evidence suggests that the Principles sequence is a viable alternative to the traditional approach.

Further analysis of the data needs to be completed to assess the relative effectiveness of alternative instruction used in the course. The planned analysis includes use of multiple regression techniques, which will incorporate data from the attitude and information survey.

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<sup>\*</sup>Joint Council on Economic Education, Test of Understanding in College Economics. For further details on the development and the norms see Manual--Test of Understanding in College Economics.



**PROJECT TITLE:** Undergraduate Interdisciplinary Course in Social Science Methodology

**PROJECT FACULTY:** David Eaton, Joel Verner, Jeral Williams, and Charles Gray

**COLLEGE:** Arts and Sciences

**DESCRIPTION.** The need for this course was based on the premise that the basic principles of scientific thinking are common to all the social science disciplines. That is, while recognizing that there are some differences, the goals of scientific description, explanation, prediction of social/behavioral phenomena, and the commitment to research guided by principles of objectivity, verifiability, and generality, all rest on a common foundation.

Social Science students typically enter their discipline through a large lecture class. This was an attempt to break through the pattern of previous experiences with an approach which stresses the experiential study of scientific method. The course is competency based, focusing on specific goals and stressing learning by experience. As such, students should be able to:

1. Develop concepts for use in the analysis of problems to be investigated.
2. Generate hypotheses about social phenomena which are consistent with the goals of scientific description, explanation, and/or predication.
3. Use data to evaluate and test hypotheses.
4. Determine implications of the results of hypothesis testing.
5. (a) Demonstrate how the scientific method works in regard to their discipline, and (b) how the process may be applied to decision making/problem solving.

This course is intended to assist the undergraduate student in personally developing a structure for integrating the materials offered in the various social science courses which he will subsequently take. Ideally, a Social Science Seminar would then bring the student a well-integrated sense of the social sciences and a logical conclusion to the major portion of the students' formal education.

The course was divided into three units. The content for the first two units included the philosophical foundations of social science, use of concepts and hypotheses, design alternatives, methods for collection and analysis of empirical evidence, and use of simple statistical models. The last unit focused on independent study in which the student developed a research proposal in consultation with one or more faculty, and where feasible, undertook the study. In some cases artificial data were generated. Where a study could not effectively be carried out, proposals were developed with the objective that the research could be contained in further independent study.

The character of the course was further emphasized by the fact that instruction was the responsibility of faculty teams from several social science departments: Sociology, Political Science, Psychology and His-



tory. There were two sections of the course and two faculty members were assigned to each section. However, all four members were involved in weekly planning sessions during the first two-thirds of the course.

**EVALUATION/STATUS.** Several measures were used to evaluate the components of the course. Students were asked to estimate the progress they had made toward selected educational goals related to critical thinking both prior to and at the end of the course. The inventory of nine goal statements was scored on the basis of a 5 point scale. There was a substantial and statistically significant gain overall. The specific goal statements showing the greatest gains were those related to quantitative thinking, understanding of the nature of science, ability to recognize assumptions, and the ability to define problems.

A Critical Thinking Orientation inventory and an Intellectual Orientation inventory were also administered on a pre-post basis. These inventories sample preferences and perceived characteristics about interest and ability to engage in critical thinking and other types of intellectual activities. The observed gains overall were not statistically significant.

The ETS Student Instructional Report was administered at the end of the course and compared to ETS national norms. Relative to national norms, students rated the course more difficult and more work than average. Also, while the quality of instruction was rated about average, the lectures and overall value of the course were seen as being substantially above the national average.

Finally, the Watson-Glaser Critical Thinking Test, was administered as a pre and posttest. While the gain was positive it was not statistically significant.

**PROJECT TITLE:** Flexible Alternatives for Undergraduate Field Experiences in Geography Courses

**PROJECT FACULTY:** Michael Sublett, William D. Walters, and Southard Modry

**DEPARTMENT:** Geography-Geology

**DESCRIPTION.** Field work has always been a critical component of the activities of professional geographers, and yet the field as a teaching setting has never been fully exploited for undergraduate students. In the field, concepts from classroom lectures or literature can be illustrated and reinforced. Further, it may be the only site on which specific problems can be examined, e.g., the dramatization of spatial problems imposed on man by distance from jobs or proximity to an industrial nuisance. However, despite the obvious importance of the field to geographers, the myriad of logistical problems all too frequently excludes a scheduled, total class field experience. It was the purpose of this project to design two alternative modes of experience which would exploit the potential of the field and resolve the logistical problems.

Two activities were proposed: (1) the preparation and dissemination of a printed itinerary for a self-directed educational field trip through a rural mid-western area; and (2) the development of the first in a series of instructional videotaped presentations in geography using highlights from the field trip. Each tape in the series is intended to form a complete unit in terms of intellectual concepts in teaching strategy while focusing student attention on a particular cluster of patterns, processes, and problems encountered in the modern landscape.

The planning for a printed document to be used as a travel guide began during the previous academic year. It was decided the itinerary would be designed to illustrate patterns of geography rather than specific characteristics of McLean County. Beginning in November, 1971, the project faculty tested a geology field trip prepared by the Illinois Geological Survey. Dissatisfied with the trip, they read documents about the local area and listed key sites. Next, they attempted to develop a complete route that would encompass each of these sites. After the route had been selected it was field tested, and minor modifications were made. The next step was additional research in extant documents.

After the grant for the project had been approved and monies allocated, photographing of the sites was repeated. Each member of the team was given responsibility for those features of the trip which were of most interest to him. Over one hundred interviews were conducted with residents, "natives", and officials. However, it soon became apparent that as soon as questions were asked about relatively distant history, the respondents were frequently in error, and county historical documents were often not better. This required a search of archival records, original deeds, land transfers, the plats of towns, and newspaper and library files.

This information provided a substantial portion of the narrative content of the itinerary. Coupled with instructions, maps, and brief site descriptions, the itinerary was divided into two parts which, if

completed, would require an eight or nine hour trip over approximately one hundred-fifty miles of the rural area north of Bloomington-Normal. Each of the two parts of the itinerary were field tested by persons other than the project faculty prior to final printing and editing. This information was to be used in production of the videotape itinerary.

The purpose of the videotape was to provide a composite simulated itinerary. Thus, a videotape was planned which would use colored slides taken from the various driven portions of the itinerary, over four hundred slides taken by air, and maps and pictures obtained from the archives of the newspaper and library. In addition, the slides were to be organized into "mini" field trips which would enable greater concentration on specific portions. When combined with scripts the slides could either be presented in regular classroom sessions or put into an audio-tutorial arrangement using a carousel projector and an audiotape presentation.

EVALUATION/STATUS. After almost two years of work, with intensive concentration during the last half year, the itinerary has been field tested, printed in a paperback format, and copyrighted. It will be ready for full-scale use in the fall of 1973. Available to anyone interested in the area, the document provides a comprehensive guided tour and should form an excellent classroom supplement. When used by faculty and students, it is expected that the limitations of scheduled field trips will be substantially reduced if not eliminated. To use this document a team of travelers is required. One or more persons are expected to read the document en route as another drives. The amount of information contained in the itinerary makes it appropriate for only the serious observer.

Due to the extensive efforts necessary to produce the printed document, the videotaped document has not yet been prepared. However, the slides, photographs and other graphic illustrations of features in the itinerary are available, and the videotape will be completed by September, 1973.

**PROJECT TITLE:** Mini-Field Work [Social Welfare I]

**PROJECT FACULTY:** Mark Moran, William Tolone, and Steven O'Neil

**DEPARTMENT:** Sociology-Anthropology

**DESCRIPTION.** This study was designed to test the feasibility and merit of a concurrent mini-field work experience for a beginning social work student. In social work, the field experience at the graduate level is of equal importance as the theory studied. To a lesser degree, it seems undergraduate social welfare classes need the same orientation. While an extensive field work experience is given in the final social work course, the purpose of this project was to see if field work would also enhance a course at the beginning level.

The objectives of the course were:

1. To determine student demand for field work in the introductory social work course.
2. To determine what effect would be obtained by first-hand contact in social work settings, e.g., would subject matter become more meaningful, would the students' true feelings about welfare clients be tested, and would it reinforce career plans in this area?
3. To assess the public relations effect on the number and nature of placement opportunities for study and future employment.
4. To identify other social work settings, which are neither too distant nor over-patronized, outside of the immediate university community.

A comparative study involving three groups was designed to systematically answer the questions of the study. All students enrolled in the course, Social Work I (SOA 221) during the spring semester, 1973, were randomly assigned to one of three groups: control (exposure to field work was not provided), experimental I (one exposure to field work was provided), and experimental II (two exposures to field work were provided). At the beginning of the course a questionnaire which measured, among other things, expectations for the course was administered to all students. In addition, they were asked to complete a demographic data questionnaire and to make a selection of the types of social work agencies they would like to visit. At the end of the semester all students responded to a second questionnaire which measured their reactions to the course. The data from these instruments represents the primary information used in the evaluation.

Aside from the data collection, the mechanics of the project were relatively simple. Agencies outside of the Bloomington-Normal area were contacted to determine their willingness to provide field work experiences. Twenty trips were scheduled. This provided an opportunity for small groups of six to nine students to visit institutions in the preferred categories for either one or two trips, depending upon the experimental condition: for example, Geneva Training Institution for Boys and Girls, Zeller Zone Center (Peoria), Illinois School for the Deaf (Jacksonville), Gateway House (Springfield), Renaissance House (Peoria), Galesburg State Research Hospital (Mental Retardation and Geriatrics Wards). Each trip usually lasted eight to nine hours including travel; however, at least one trip required an overnight stay. A faculty assistant, using a university

vehicle for transportation, accompanied each group of students on these trips. The time enroute provided an opportunity to discuss the agency and events, and the return trip provided a chance to review the events which had occurred. The activities in the agencies varied, but the general pattern was a brief introduction by some official followed by direct contact with the residents of the agency.

EVALUATION/STATUS. The majority of students in this course lacked first-hand experience in their field interest, even though they were about to embark on their careers. Home residences for many are near a central city neighborhood or within a central city; however, many also live in rural and suburban areas.

Academically, the students were about equally divided between average, somewhat above average, and above average or superior. A few were below average. Many of the study sample plan to seek higher academic degrees although many plan to work first before furthering their graduate studies. A variety of majors and minors were found in the study sample, with a large number from Sociology, as might be expected.

The course was judged to be above average and interesting by the majority of the students, and they reported that it helped them become aware of social problems and the welfare system's effect on society. The students believed that mini-field work experience helped those participating in it to do better than in other subjects in their major study area. It was also believed to have helped them to do better in this course and in general education courses. Although large percentages of each subgroup were glad they had taken the course, those having a first and second mini-field work experience rated this variable the highest. Those having two experiences reported their interest in working as undergraduate social workers was greatly increased.

It should be noted that the reactions of the control group without the field work experience closely paralleled that of the experimental groups. The interpretation of this effect is not clearly explained.

As hoped, the public relations benefits of this program not only provided opportunities for visiting social agencies which heretofore have not had excessive requests for cooperation, but also led to summer jobs, full-time jobs, and invitations to return for volunteer services.

The project was deemed sufficiently successful by its authors that it has been requested that it be continued during the next academic year. Support for this purpose is being sought.

**PROJECT TITLE:** Evaluation of Three Instructional Models in Biology Laboratories

**PROJECT FACULTY:** Jack Ward

**DEPARTMENT:** Biological Sciences

**DESCRIPTION:** Biology 100 is a general education course that has been continually redesigned on the basis of student evaluations. Each semester enrolled students respond to a lengthy questionnaire, the results of which are analyzed to determine which aspects of the course are most effective. Those aspects that rank high are retained or expanded, while those aspects that rank low are de-emphasized or deleted. Therefore, over the years, there has been a shift in content and philosophy, and the changes have resulted in a course that has both a cognitive and affective thrust.

The purpose of this project was to continue the ongoing process of evaluation by focusing directly on methods of laboratory instruction. A review of the literature involving experimental instruction in the sciences resulted in the identification of three instructional models: pattern appeal, freedom appeal, and personal appeal. The pattern appeal model is the traditional science laboratory approach where emphasis is on orderly structure and organization, while the freedom appeal is its antithesis. Personal appeal is a compromise model. The specific questions to be studied were concerned with the effect of the three laboratory instructional models on overall student achievement in the Biology 100 course and the resulting attitudes of students toward the course.

The sixteen laboratory sections scheduled for the spring semester for Biology 100 were randomly divided into three groups, one group for each model of instruction. All groups used the same laboratory manual, textbooks, examinations, and videotaped instructions. The models formed a continuum from instructor-initiated investigation to student-initiated investigation.

To implement the project, systematic work sessions were held in which the director met with all laboratory assistants. Initially, the details of the instructional models were outlined. The characteristics for the pattern appeal model were (1) formal attire for the instructor, (2) formal teacher-pupil relationships, (3) formal mood, (4) systematic announcements, (5) formal lecture following videotape, (6) assigned seating, (7) assigned laboratory work, and (8) formal summary of the laboratory lesson. The personal appeal model was characterized by (1) no specific dress requirements for the instructor, (2) informal teacher-pupil relations, (3) semi-formal mood, (4) systematic announcements, (5) introduction of laboratory topic to supplement videotape, (6) assigned seating, (7) supervised laboratory work (some instructor-initiated and some student-initiated), and (8) student initiated review. The freedom appeal model was characterized by (1) no specific dress requirements for the instructor, (2) no formality in teacher-pupil relationships, (3) attendance not mandatory for videotaped instructions, (4) completion of laboratory work not mandatory, (5) no assigned seats, (6) instructor participates only in student-initiated inquiry, and (7) no review at end of laboratory period. In subsequent work sessions, plans for laboratories were systematically reviewed and outlined, and the instruction was simulated for the various models to provide for consistency, when necessary, within models. Laboratory instructors

served as formal observers for each others' sections as a further check on adherence to the proper model.

EVALUATION/STATUS. All students in the Biology 100 laboratories were asked to respond to a questionnaire during the last regularly scheduled laboratory period. The questionnaire consisted of 112 items, 38 of which were attitude items designed for the EIP project. Approximately 33 percent of the students responded.

The 38-item scale was analyzed, using a Kruskal-Wallis One-Way Analysis of Variance. The difference between the group means was significant ( $H=29.49$ ;  $p<.05$ ). Examination of the sum of the ranks of the Kruskal-Wallis test indicated that students participating in the personal appeal and freedom appeal sections had a more positive overall attitude toward their laboratory experiences than did the pattern appeal group. However, there were no significant differences among the groups for the four sub-categories of the instrument: (1) general attitude toward laboratory; (2) attitude toward instructor; (3) willingness to follow directions; and (4) perceived competence of laboratory subject matter. When students were asked how many expected to become Biology majors, 24 percent of those in the pattern appeal group indicated "yes", compared to 13 percent and 14 percent for the personal appeal and freedom appeal groups, respectively.

Responses to certain items suggest that the freedom appeal model may teach students to be more independent. For example, in response to the question "I should be allowed to work at my own pace during a given lab period" 71 percent of the respondents in these sections "strongly agreed" with the statement compared to 34 percent in the pattern appeal group, and 64 percent of the respondents in the latter group agreed that the instructors should direct all activities in the laboratory compared to 45 percent in the freedom appeal group. Response from the personal appeal group generally fluctuated between those of the other two groups.

A 23-item semantic differential was also designed to assess "Your Experience in the Biology 100 Laboratory." No significant differences in attitudes were found. Thus, it appears that the information yielded by the various measures reflect different facets of attitude toward Biology 100.

Students were not required to be present for the laboratory sessions. Thus, attendance would be a direct measure of the students' perceived benefit of these sessions. For all three models attendance declined as the semester progressed. However, there were noticeable differences in the mean percentage attending the laboratory sessions for each of the models: pattern appeal - 45 percent; personal appeal - 60 percent; freedom appeal - 56 percent.

To assess the effect of the three types of models on academic achievement three unit examinations and a final examination were administered. An analysis of covariance, with a pretest as the covariate and the laboratory section as the sampling unit, indicated some differences in achievement in favor of the pattern appeal group.

For the purposes of the study extensive efforts were made to adhere to the particular instructional models. The evidence suggests that no single model is optimal for both cognitive and attitudinal objectives. Some structure appears to be necessary, but within that structure is a need for

students to develop a degree of independence in academic inquiry. It may be conjectured that the effective model is to begin with the pattern appeal approach and gradually shift to the freedom appeal model as students develop the necessary general laboratory competencies.



**PROJECT TITLE:** Educational Psychology: The Development and Implementation of a Two-Stage Learning Model Involving Mastery of Basic Concepts and Fundamental Skills and the Development of Higher Order Cognitive Skills

**PROJECT FACULTY:** Noel Gill, Pat Chesebro, William Gnagey, Barbara Goebell, Margaret Jorgensen, Charles Sherman, Dorothea Smith, and Margaret Walmon

**DEPARTMENT:** Psychology

**DESCRIPTION.** Educational Psychology is a required course for all students who are seeking certification to teach at the secondary school level. As a result, it draws students from virtually every discipline in the university. Making this course relevant, interesting and appropriate to students coming from each of the disciplines which have their own unique instructional problems has posed challenging but difficult problems to the faculty.

Beginning with the fall of '72, a two-stage learning model was developed which provided for (1) the acquisition of basic concepts and fundamental skills which were perceived as being germane to all disciplines, and (2) the development of higher order cognitive skills which would have a greater relevance to disciplinary requirements. This latter category was called Advanced Learning Project (ALPS). To implement this model, the faculty members teaching this course were assigned areas of interest in competency rather than a rotation of lecture and other required duties. Extensive efforts were made to determine the most appropriate and relevant material for such a course, and this material was incorporated into the proposed instructional model and team approach.

In brief, the goals of this project were:

1. The development of a more effective model for learning, focusing on appropriate instructional methods for desired educational outcomes.
2. An improved approach to team teaching, involving more effective use of staff.
3. A re-evaluation of course content for undergraduate educational psychology.

Specific objectives and methods of evaluation were determined for each aspect of the program. Program objectives included:

1. The development of an individualized mastery approach with the acquisition of basic concepts and fundamental skills, including the effective coordination of behavioral objectives, advanced learning organizers, multidimensional learning activities, mastery exams, a system of immediate and specific feedback, and personalized remedial assistance.
2. The development of a bank of advanced learning projects (ALPS) for developing higher order cognitive skills including integration, emphasis, application, and evaluation.
3. The development of instructional formats which maximize individual differences in learning style.

4. Increased interaction among students and between students and faculty in higher order learning activities.
5. The development of a more effective model for team teaching.
6. The conducting of empirical studies to determine the effects of changes in instructional methods.

The course provided for the selection of material for each of the four units: social factors of learning, human learning in the school setting, evaluation and measurement of learning outcomes, and developmental factors in learning. These were considered basic and fundamental to the future development of higher order cognitive skills. Provision was also made for the design and coordination of behavioral learning objectives, multidimensional learning activities, mastery exams, and personalized remedial help.

As part of the team approach, two faculty members devoted a substantial portion of their assigned time to improving the mastery portion for each unit. This involved the writing and rewriting of learning objectives and mastery items to insure careful coordination of objectives and items, a sufficiently broad base of items for each objective, and equivalent forms of mastery exams for each unit. An item analysis was done on each exam to eliminate ambiguous and poorly written items. The result was a set of three to five equivalent mastery exams for each unit, with carefully coordinated learning objectives and coded keys. Other team members took the responsibility of conducting introductory sessions for each unit and providing advanced organizers for material to be learned. Review sessions and additional remedial help were provided by remaining team members.

From the student's point of view, each of his four units of study was divided into three parts:

1. A large group lecture, intended to provide an integration and application of the concepts of the unit, was given by a faculty member.
2. One week later, a mastery test was given on the content of the lecture, and assigned readings were defined in the handout for the unit. The objectives and appropriate location in the text were specified in this handout. Mastery was demonstrated by 70 percent accuracy on a multiple choice test. In the event that this criterion was not obtained on the first test date, a second date was identified two days later.
3. Those students who had demonstrated mastery selected the advanced learning project which was most appropriate to their interest. Each student received a descriptive statement handout including information regarding instructor, date, time, room, project title, objective, procedure, and criteria for credit. It was the student's responsibility to select one of this diverse set of offerings. For the next two to three weeks each student worked on his project with the individual instructor. At the end of this period, it was expected that all students would have successfully completed the requirements for the project.

No specific letter grades were assigned inasmuch as the course was a credit-no credit course. The cycle of introductory lecture, mastery exam, and advanced learning project was then repeated for the next unit.

Of special significance to the project was the system of immediate and specific feedback. For each mastery test students were provided with a "split half" answer sheet: one side of the answer sheet was completed and turned in for official recording, the other half, which was retained by the student, was used to score against a "posted" key after each exam. Then, a review session was held immediately afterward where students could clarify specific problems. Additional tutorial help was provided for students who required further assistance.

EVALUATION/STATUS. Student ratings of this course, as compared to a more traditional model of instruction, provide a clear illustration of the perceived value. The amount of material assigned and the difficulty of this material was rated less than in the traditional approach. By contrast, amount of knowledge attained, application and relevancy of material, interest and motivation levels, opportunity to interact with instructor, emphasis on cooperation rather than competition for grades, feedback of results, and the general quality of instruction were rated above average. In comparison, the ratings on these same factors are uniformly in the opposite direction when applied to the instructional procedure used the previous year. For example, the average rating of the course was 3.62 during this project and 2.27 for the preceding year, (higher score, greater value); feedback of results was 4.07 this year, 1.97 under the former system; and, application and relevancy of material was rated 3.65 for this project, 2.77 for the preceding year. Other differences in ratings are equally significant.

The apparent success of this project was not without its problems; however, this fact was viewed both positively and negatively. At the outset, there was an underestimation of the magnitude of development and coordination of staff and programs. The coordination of staff required cooperation and support from the entire team, but though progress often appeared somewhat slow as ideas were exchanged and policies established, increased input and involvement led to a more refined product.

In summary, the project was successful in reference to the objectives stated. The values are two: the immediate is the improvement of undergraduate instruction in educational psychology at ISU; the long-range lies in the potential application of this model to other undergraduate courses. Additional modifications, revision, and refinement are still necessary, but it is clear to all involved that the present state is a significant advancement over the past.

**PROJECT TITLE:** Rethinking Anthropology; A Plan for Restructuring the Introductory Course in Cultural Anthropology

**PROJECT FACULTY:** Robert Dirks, Michael Calavan, Embrie Borkovic and Jonathan Reyman

**DEPARTMENT:** Sociology-Anthropology

**DESCRIPTION.** Each semester, approximately one thousand students have enrolled in Introduction to Cultural Anthropology (SOA 180). As the course has been structured, these students met in one of three sections of three hundred-fifty or more. Some registered as a part of the General Education requirement. Others enrolled out of personal interest; however, contact between student and instructor was minimal, discussion was difficult, and interesting questions were unavoidably by-passed.

From the instructor's point of view, this structure presented still other problems. The course was often viewed as the antithesis of an exciting intellectual experience--a necessary evil. The instructor in each section was required to perform many repetitive exercises which were duplicated in each section, and time was wasted in non-productive bookkeeping. Contact with students was wordlessly inhibited by formalities, and the large number of lectures the instructors were called upon to give was seen as playing a part in limiting their uniform quality. In overall terms, three times per week, three individual faculty members delivered three fundamentally cognate lectures to three essentially similar bodies of students in three identical settings. The purpose of this project was to restructure the course, eliminating as much as possible the repetition, duplication and inherent problems which were perceived as being directly responsible for student and faculty dissatisfaction.

The project provided for planning and development time to be devoted to the following tasks:

1. Development of a new course outline and individual lecture topics.
2. Review of available textbooks.
3. Examination of alternative supplementary readings.
4. Review and acquisition of teaching aids.
5. Review of innovative techniques used in equivalent courses in other universities.
6. Handling of unanticipated but inevitable administrative and mechanical problems.
7. Development of procedures for evaluation of student performance.
8. Creation of cooperative channels with various administrative work units within the university.

Throughout the semester extended periods of time and energy, far in excess of that provided by the project grant, were devoted to these tasks. Initial consideration was given to the identification and selection of content areas for the reorganized course. The selected topics were placed in a schedule and assigned for further development to one of the four members of the team according to his interest and expertise. A textbook was selected. Commercial versions of supplementary readings were con-

sidered at length and finally rejected in favor of a "tailor-made" package which would be published but used only at Illinois State University. Teaching aids were selected, purchased or produced.

From the outset, the course had been scheduled for the new 3500 seat university auditorium. The auditorium represents an exciting potential for "super-large" group instruction, but it also represents a new series of problems of an administrative, technical and "performance" nature. Although the exact nature of some of these problems is still unknown, many were evident at the very beginning and required great quantities of time and energy.

In addition to the large group lecture section, a series of small group discussion sections have been scheduled. Providing one hour of optional credit, the discussion sections are designed to provide a chance for a more intensive analysis and elaboration of some of the topics presented in the large group lecture.

EVALUATION/STATUS. Large group instruction is perceived as providing a more efficient use of resources, but it also carries the onus of greater dehumanization and lack of flexibility for both students and faculty. This course, with optional discussion sections and presentation in the newest and perhaps most exciting auditorium in the midwest, provides an interesting opportunity to see if "super-large" group instruction can be made challenging and exciting to students. It is a laboratory not only for the subject matter, but also for multimedia presentations, the performance aspects of instruction, and supplementary instructional procedures. Although not the first time that ISU has embarked on a "super-large" group instructional mode, it is the first time that institutional resources have been allocated for an examination of these substantive questions.

The course format and structure for the next semester is not seen as a final product. Rather it is expected that the refinement and the development process will require several more years of concentrated work.

**PROJECT TITLE:** Individualized Instruction and Preprofessional Training in Composition

**PROJECT FACULTY:** Steve Kagle and John Heissler

**DEPARTMENT:** English

**DESCRIPTION.** The development of student writing skill is an important instructional objective since the skill is essential for success at the university. This project was designed to strengthen the proficiency track of the Introduction to Composition course in two ways: (1) students who demonstrated proficiency during the first nine weeks of the course would be provided with additional opportunities for advanced instruction in writing; and (2) students who needed additional work would receive tutorial assistance on a small group or individual basis. The project was also designed to provide undergraduate and graduate students planning for teaching careers the opportunity to integrate their educational and professional experiences.

To implement the project, four graduate assistants, under the direction of the project faculty, both taught and supervised sixteen undergraduate assistants. The undergraduates assisted in remediating deficiencies of students working to achieve the level of writing ability necessary to complete the Introduction to Composition course. All of the assistants were enrolled in English 389, an experimental seminar on Problems of Teaching Composition. In conjunction with the formal class work of the seminar, they studied teaching procedures by assisting in standard classroom situations. As the semester progressed, they began the individual or small group instruction of selected special students.

At the end of the first nine weeks those students in the basic writing course who had demonstrated writing competence could elect one of the following two credit hour courses for the second nine weeks: (1) Advanced Composition; (2) University Studies Seminar on a Selected Theme in Literature; and (3) Introductory Creative Writing. The teachers of these courses were those who taught in the proficiency track for the first nine weeks and were freed for the second nine weeks by assistant teams assuming responsibility for their classes. These assistants then worked with special students, either in small groups or on an individual basis, in order that these students would overcome their writing problems and achieve writing competence. The assistants were free (under the guidance of the teacher in charge of the section and the instructor in the 389 course) to use whatever methods were appropriate to achieve this end.

**EVALUATION/STATUS.** Proficiency was determined according to a list of guidelines constructed by the Freshman English Committee. These guidelines were given to all teachers and students of English 101. A student was required to complete two papers which met the guidelines and to demonstrate his ability to document sources in order to proficiency the class. Of approximately 1100 students enrolled in the second semester proficiency course, Introduction to Composition, almost one-third reached proficiency within the first nine weeks. Of these, two thirds went on to enroll in second nine weeks courses with more advanced writ-

ing components. Ninety-three percent of all students were able to attain a proficiency status by the semester's end. Students responded to a questionnaire which required them to evaluate the proficiency program. The mean rating of the efficacy of termination of attendance upon proficiency was 4.39 on a scale of 1 (low) to 5 (high). The mean response when rating the credit/no credit system as opposed to the conventional grading system was 3.76. When asked about the effectiveness of graduate and undergraduate assistant teaching, 85 percent of the respondents said that the assistants were either "of prime importance" or "helpful."

In informal evaluation (written statements), the sixteen undergraduate teaching assistants used in the project indicated that the experience was excellent preparation for teaching. They suggested that their experience had definitely contributed to their development as teachers. In general, students, teaching assistants and faculty appeared to be pleased, in varying degrees, with the project. The main accomplishment seemed to be the fact that some individualization of instruction could be attained through this format. The second nine weeks advanced courses were rated very highly by the teachers and students involved. In particular, those students who had strong writing instruction in high school appreciated the opportunity to advance beyond the level of conventional instruction in English Composition and receive additional credit hours for their activities.

The above program allowed teaching techniques and course content to be more closely related to differing student abilities and, thus, was directly beneficial to the students involved. In addition, the proficiency track allowed for the further development and refinement of the concept of "writing competence." This development should provide the basis for a more rigorous study of the instructional procedures currently being used to teach writing skills.

**PROJECT TITLE:** Development of Community Studies Project

**PROJECT FACULTY:** Thomas Wilson and Francis Brown

**DEPARTMENT/DIVISION:** Political Science and the Division of Extension and Field Services

**DESCRIPTION.** The increasing emphasis on the use of off-campus or Community Based Learning (CBL) experiences as supplementary or substitute instructional procedures on the national level has been paralleled at ISU. Although traditionally identified with social work, sociology, and student teaching, the interest has become so proliferous that virtually every discipline can now find some value in using the community as a classroom. However, this growth has also carried certain problems with it. The social and governmental agencies in the twin cities of Bloomington-Normal (population approximately 73,000) have not been able to keep pace with increasing requests for CBL. Where ISU's involvement has been sought in the community, there is now a virtual inundation of some agencies by students involved in CBL. When combined with placement requests to the agencies from the other institutions of higher education in the area, particularly Illinois Wesleyan University, a need is created for some form of coordination both in and outside of the university.

Because the initiative and responsibility for CBL experiences has resided primarily with the students and faculty in the past, the nature and extent of the activities was not reported and coordinated and thus, not fully understood or appreciated. In the fall of 1972, a progress report and recommendations were submitted to the Academic Senate by the "Ad Hoc Committee on Community and Campus Programs". In this report it was recommended and unanimously approved by the Senate and approved in principle by the President that:

"Illinois State University become actively involved in establishing a clearinghouse operation to relate resources of the university to the needs of the community, and to relate resources of the community to the teaching, research, and service functions of ISU...."

The Committee suggested that there should be provisions for:

1. A system of communication within the university and a central place with information about and access to all resources at ISU that are relevant to community services.
2. A system of communication reaching outside the university, which would be able to obtain and give proper direction to all inquiries for informational assistance available through the university.
3. A constantly growing file of information in common demand including information about sources outside ISU to which inquiries could be referred. These sources would include other educational institutions, community, state, and federal agencies, and resource personnel not connected with ISU. This "resource file" would also provide access for ISU personnel wishing to use off-campus people in the teaching-learning process.



4. A system for efficient handling of frequent or standard inquiries, the use of pamphlets, information sheets, bibliographies, etc.
5. A system for communicating to appropriate individuals or agencies within ISU possibilities for new or further research, community service, or a combined teaching-research service as indicated by requests from the community.
6. A system for translating and interpreting results for research or information developed by ISU so that it is understandable and usable in the community.

These recommendations represented the long-range goals of this project; however, in order to implement these goals, it was first necessary to conduct a status survey of CBL experiences at ISU. This deceptively simple task was the primary objective of this project.

To accomplish the objective, three surveys were conducted and a workshop was held. The target audiences of the surveys were: (1) faculty, (2) students, and (3) community agency leaders. The workshop was designed to bring these groups together for a discussion of the problems and concerns which each group held.

The faculty survey was made up of three interrelated steps: (1) personal interviews with 20 faculty members who were involved in CBL experiences; (2) a preliminary survey of all faculty members to determine those who had had experience or who were interested in having CBL experiences for their students; and (3) an "in depth" questionnaire sent to all who responded positively to the second inquiry. The results of this questionnaire represented a relatively comprehensive summary of faculty interest and activities in CBL experience.

An approach similar to that used for the faculty survey, with the deletion of the second step, was employed to obtain agency reactions. Interviews with community agency personnel preceded the construction of the questionnaire sent to all agencies of interest. The summary of those responses represented the agencies' reactions to ISU's CBL activities.

A little over one hundred students who had been directly involved in some type of CBL experience responded to a questionnaire which asked about the evaluation of the experience, the type of supervision they received, whether or not it was a meaningful experience, and how they were treated by the agencies. The summary of this data represented the third source of input into the project.

On May 24, 1973, a workshop was held to which fifteen faculty, fifteen students, and fifteen community agencies' representatives were invited. The purpose of this meeting was to give all of the participants a chance to "air" their views about CBL experiences. In one sense, this represented a validation of the surveys; in another sense, it represented an extension and elaboration of the problems and possibilities of community based learning.

In addition to the workshop and surveys, there were numerous formal and informal contacts with state and local agencies regarding CBL experiences.

EVALUATION/STATUS. The nature of CBL experiences at ISU was a relatively unknown quantity at the outset of this project. Although all of the project staff had experience in CBL activities, they did not have a comprehensive picture of the quality and extent of the activities. The surveys, workshop, and informal contacts measurably changed this state.

The data from the faculty survey clearly illustrates the nature of CBL experiences at ISU. Twenty-eight of thirty-one departments reported that they were involved in CBL in some manner. Within these departments one hundred-eight courses had some requirement for off-campus experience in the form of independent study, intern or externship, activities required as part of a course, or volunteer activities. The number of credit hours which could be earned in these activities varied from one to nine with approximately 70 percent of the respondents indicating an average of three to four hours. The evaluation of these experiences included written reports by students, evaluation by an internship supervisor, ongoing counseling and evaluation by faculty, examination, faculty observation, and reports in class. Over forty agencies were identified as participants in the activities. These included accounting firms, public schools, churches, day care centers, family service programs, drug centers, state offices, and prisons. Among the problems identified in CBL experiences, the faculty reported supervision, evaluation, time, transportation, placement, and expenses.

The need for a clearinghouse in some form was supported in principle by most respondents, but the exact form varied. For some, a bureaucratic system controlling placement, communication, information, and other necessary arrangements associated with CBL seemed appropriate. On the other hand, there were those both within and outside the university who felt the need for a less formal arrangement. All seemed to agree that there was a need for some focal structure which would give recognition to CBL as a legitimate form of instructional activity.

Using the information gathered during this project, the Office of the Division of Extension and Field Services fully expects to give some degree of formalization to a clearinghouse operation. This will probably take the form of information dissemination, facilitating communication flow, and providing a data bank of information for all who are interested, both within and outside the university.

**PROJECT TITLE:** Seminar in Illinois Corrections

**PROJECT FACULTY:** Irving Jacks and Clyde B. Vedder

**PROGRAM:** Corrections

**DESCRIPTION.** The Program in Corrections has frequently used practitioners in corrections as guest lecturers in its various course offerings. These presentations have been perceived as being among the most fruitful learning experiences of the courses since the use of outside resource people has made it possible for students to receive a far greater range of theoretical and factual information than is possible within the limitations of the regular faculty in the program. It was the purpose of this project to design a seminar which would build on these experiences and allow students and guest participants who were successful administrators and practitioners in corrections to explore at greater length those issues that are of significance to both parties.

Through a series of encounters, rather than the usual "one-shot" presentation, a more critical analysis of correctional problems would be afforded. The guest would be able to give a more comprehensive picture of the problems, practices, and activities in his area of competency. The students in turn would have a greater opportunity to examine these statements critically, inquisitively, and in depth. It was expected that the outcome of this interaction would be two-fold: (1) the students would obtain a practical and realistic perception of corrections as practiced in the state of Illinois; (2) the relationship between the state agencies and Illinois State University would be strengthened.

One night each week throughout the semester, one of five guest lecturers, eminent in the field of corrections, came to campus and met with approximately 20 upper division majors in Corrections and allied fields. (On one occasion a field trip to the Cook County Jail and Criminal Court was substituted for the regular meeting.) Although one of the project faculty acted as coordinator, the responsibility for the content and mode of presentation rested with the guest lecturer. In general, each described his own area of responsibility, and attempted to elicit questions and reactions from the students. For the most part, the atmosphere was informal. There were no formal assignments or requirements usually, but one of the guest lecturers did ask the students to assume responsibility for an outside report. No tests were given; however, a final course evaluation was designed and administered to obtain the students' reactions to the seminar. Grades were assigned on the basis of the quality of participation during the semester.

**EVALUATION/STATUS.** The emphasis upon the practical as opposed to the theoretical and the unique styles of each guest lecturer made this seminar a very different experience for the students. Although responses to the post-course evaluation have not been systematically tabulated or analyzed, a cursory review of the returns suggests that students were uniformly enthusiastic about the experience. This reaction can be attributed to several features of the seminar: the guest lecturers, the needs of the students, and the structure.

The lecturers brought an unusual array of talent, experience, and responsibility to the seminar. They were the top men in their field in the state of Illinois. They represented "the" textbook of applied practice in corrections in the state. They answered all questions, no matter how probing or personal, without hesitation, and talked candidly about the many possibilities and problems they faced and how they attempted to resolve them.

For the students, the guests represented information, clarification, illumination in some cases, and a possible source of employment for all. The lectures represented most students' first chance to understand what it means to be a practitioner in corrections at the administrative level, and it was the first comprehensive overview for everyone. The field trip to the Cook County jail was especially illuminating. It was the first inside visit any student had made to this facility, which has acquired a notorious reputation over the years. Although still not a resort hotel, it is not the medieval torture chamber they had expected. Instead, it appeared efficient, clean, and relatively humane; the students' preconceptions were nullified. In a somewhat similar vein, the guest lecturers provided examples of men who were working hard at jobs which are important to themselves and society, who are balancing the ideal against the real daily, and who obviously have a working understanding of what can and cannot be done in the field.

Lecturers and students worked within a structure that was deliberately intended to be as informal as possible. Other than providing necessary support services, such as attendance and introductions, the faculty were as unobtrusive as they could be. Some of the guest lecturers even suggested that the faculty be absent from the classroom so that the students would feel freer to interact with the guests. Few students were ever absent, and although occasionally late, the guest lecturers were always present despite the traveling conditions. The seminar was obviously important to both the students and guests.

It is expected that this seminar will become a regular feature of the program in Corrections. A few minor revisions are deemed necessary, e.g., more field trips, and restriction of admission to students in Corrections who have both high potential and interest in corrections and the necessary backlog of information.

**PROJECT TITLE:** Computer Assisted Instruction

**PROJECT FACULTY:** Gary J. Clark and Louis R. Lieto

**DEPARTMENT:** Chemistry

**DESCRIPTION.** The PLATO system (PLATO is the acronym for Programmed Logic for Automatic Teaching Operations) is probably the most sophisticated and best Computer Assisted Instruction (CAI) system in the world. Now in its fourth developmental stage, PLATO IV, its terminals can provide tutorial instruction to students wherever a telephone linkage with the Urbana campus of the University of Illinois is available. This potential has been demonstrated in Europe and Asia. When PLATO IV is completed, it is expected that there will be over 4,000 terminals in service. Some of these are already in operation.

Although PLATO represents monumental achievements, there are still many questions to be answered about its value as an instructional system. The purpose of this project was to evaluate the potential of the PLATO system at Illinois State University with initial concern being limited to the Department of Chemistry's laboratory offerings in the introductory course. (Chemistry 141: General Chemistry II). The original design for this evaluative effort called for a comparison between one group of students, who were expected to use the terminals as a supplement to the laboratory, and a second group, who would not have such contact. The comparative criteria were: (a) performance on examinations; (b) performance in the laboratory; (c) attitudes toward the course and the PLATO system; and (d) comparative opinions of the instructor in the large group lecture. Additional data of a non-comparative nature was expected to be obtained through colleagues' reactions. Sixty students from a total enrollment of 375 students were to be randomly selected to use the terminals. It was expected that this would produce a relatively unbiased sample.

Despite intensive efforts to have the terminals available at the beginning of the spring semester, it was not until the last third of the semester that they were usable because of installation delays and operational problems. As a result the original objectives were radically revised. Instead of a comparative analysis of the effectiveness of the PLATO system, efforts during the remaining time of the project were devoted to obtaining some familiarity with the intricacies of the system by both students and faculty.

It was possible for the authors to write one program in Chemical Kinetics, give students in the laboratory sections a chance to have hands-on experience with this program and the terminal, and also provide faculty both in the Department of Chemistry and elsewhere across campus a chance to become acquainted with some of the PLATO characteristics. Students in an upper division course in Qualitative Analysis were also given a chance to use a program developed for this purpose at the University of Illinois.

**EVALUATION/STATUS.** The comparative effectiveness of the PLATO system at Illinois State University is still unknown. The data collected on those activities which did take place during the last month and a half were

not systematically evaluated; however, as a result of an opinionnaire administered to both faculty and students, the project faculty were sufficiently encouraged that they have submitted a request for continued funding to enable a test of the original questions. In this sense, the relatively brief experience may be interpreted as "valuable."

From an institutional perspective, there may be an even greater value. This project exposed certain problems which could not have been anticipated without the experience. There were problems of an administrative, logistical, and financial nature. Among these were questions of site location, computer and terminal reliability, scheduling, cost-benefit analysis, and allocation of resources. It may be assumed that some if not all of these issues will be resolved through continued study and development both at ISU and the University of Illinois. It is in this sense that the project made a significant contribution.

**PROJECT TITLE: Special Education Junior Semester Off-Campus**

**PROJECT FACULTY: Robert Hemenway, Thomas Caldwell, Sam Price and Robert Hogan**

**DEPARTMENT: Special Education**

**DESCRIPTION.** The purpose of this project was to provide clinical teaching experience for Special Education teacher trainees early in their college careers. One of the difficulties encountered in the training of Special Education teachers is the limited access to the large number of students requiring special education. As a consequence, teacher trainees have limited contact with exceptional children until their student teaching experience. This program attempted to overcome this problem by placing the teacher trainee in an off-campus center in the junior year. This center, established in cooperation with the Special Education District of Lake County (SEDOL), made opportunities available for a trainee to work closely with special students because of the favorable ratio of students to trainee.

Generally, the goal of the project was to bring about an improvement in the quality of teacher education in Special Education by achieving the following objectives:

1. To provide ISU Special Education students in their junior year with an opportunity to learn in a situation which integrates theory and methodology with intensive, direct, supervised experience in educational programs for handicapped children.
2. To reduce overlap and redundancy among theory and methodology courses required in the areas of Mental Retardation and Maladjusted by combining them in courses under the general rubric of Developmental Disabilities.
3. To bring the university and public schools together in a cooperative program designed to improve teacher education and to facilitate the application of organized knowledge to the problems of Special Education at the local school level.

The program provided the opportunity for nineteen juniors to teach in an off-campus site in Lake County. This year staff members from ISU traveled to the site twice a week. In the morning the staff members supervised students in their practicum assignments, and during the afternoon they taught characteristics and methods courses with the cooperation of the professional staff of SEDOL. Upon return to campus, students are expected to complete all other curriculum requirements, including student teaching.

ISU students enrolled in the program earned twelve semester hours of academic credit and four credit hours in field work, which in total equal the average full time load of an ISU student on campus. In order to earn this credit, each student spent 25 hours per week in classes for handicapped children under the direct supervision of SEDOL teachers, and five hours in formal academic activity under ISU faculty. The formal course work was organized into instructional modules, developed jointly

by ISU and SEDOL staffs for use in the twice-weekly classroom sessions held in Lake County.

The academic content of the instructional modules designed for the project differed significantly from the academic content of courses offered at ISU. The course work generally offered to the Special Education students is organized according to the recognized domains of traditional academic disciplines. Courses in Mental Retardation, Behavior Disorders in Children, Education of the Mentally Retarded, Education of the Neurologically Impaired, and others are representative of the courses taken at ISU which are part of the professional preparation of Special Education teachers. At SEDOL, instead of selecting individual courses from those already offered in the traditional academic disciplines and assembling them in a sequential program of studies, courses were designed on the basis of an analysis of the daily activities of professional practitioners. Academic specialists from ISU and practicing professionals from the field of Special Education were called upon to design instructional modules which could be utilized to teach the required professional skills and related information to the students. The content focused on the characteristics and education of children with developmental disabilities, and the one feature which the modules were to have in common was their relevance to the professional practice of teaching. The instructional modules and their immediate application under professional conditions in the classroom is the heart of the ISU/SEDOL project.

**EVALUATION/STATUS.** Questionnaires and interviews were utilized in evaluation of the project. Generally, after the completion of a module, both the ISU students and the SEDOL teachers responded to a questionnaire which gave both groups the opportunity to criticize and evaluate, in both a structured and unstructured way, the presentation and content of the instructional package. At the end of the semester both groups provided additional information about each module, which served as a consistency check on their initial reaction.

Six of the modules were evaluated in this manner by the students. Each learning activity and the overall value of a session was rated on a scale which ranged from 1 (extremely practical) to 5 (no benefit whatsoever). The overall student ratings of the modules at the time of completion of the modules ranged from 1.4 to 2.1, and, at the end of the project, the ratings ranged from 1.1 to 1.8. The SEDOL staff evaluated four of the modules, and their initial overall ratings ranged from 1.3 to 1.6 while their final ratings ranged from 1.4 to 2.2. The reasons for the shifts are not clear at this time; however, it is clear that the project participants were enthusiastic in their endorsement of the various modules.

Items relating to the achievement of project goals were included in the questionnaire administered at the end of the project to the ISU students, SEDOL staff, ISU project faculty, and the SEDOL and ISU Administrative staffs. The goals were rated on a scale of 1 (high rating) to 5 (low rating). The goal statements and the mean ratings for each group were included in Table I.

The results from this table indicate that while all groups viewed the project as being reasonably successful in the achievement of its goals, the student endorsement was the strongest and most enthusiastic.



Perhaps this endorsement can best be summarized by noting that in a global question related to their perceived educational growth, all students indicated a rating of 1, the highest rating possible.

In group interviews with the students, essentially the same kind of enthusiasm for the project was communicated. The student criticisms of the project dealt with (1) the need for direct communication with ISU to handle problems such as course registration, and (2) the need for a person they could relate to in regard to any personal problems arising during the course of the off-campus experience. The principal benefit as the students viewed it was the experience they gained in dealing with children having special education needs. One student comment summarizes this feeling well:

I think one of the most important things we learned is that kids are human. And, to treat them the right way you have to be just as human as they are. You have to learn by falling on your face and realizing you treated the kids as sub-human, something straight out of a textbook.

TABLE I  
ACHIEVEMENT OF PROJECT GOALS

Goal Statement	Mean Ratings			
	SEDOL Staff (N=20)	ISU Students (N=19)	ISU Proj. Faculty (N=8)	ISU/SEDOL Admin. (N=8)
Students are to:				
1. learn to use more realistic criteria in their personal decision regarding Special Education teaching as their chosen vocation.	1.7	1.1	2.5	1.9
2. learn basic skills in developing curriculum and other procedures for the classroom management of exceptional children.	1.3	1.1	2.5	2.3
3. learn professional procedures for observation, assessment, and measurement of the child's progress in the classroom.	1.6	1.1	2.6	2.1
4. learn to utilize supportive personnel (social workers, psychologists, speech therapists, etc.) and to understand their respective roles in Special Education.	1.9	1.2	2.5	2.4
5. acquire a broad understanding of law as it applies to professional practice in the field of Special Education.	1.9	1.5	2.6	2.8
6. learn a theoretical framework for the identification and description of Special Education children and for the formal assessment of their educational needs.	2.0	1.4	3.0	2.8
7. become prepared to assume the responsibilities of a student teacher.	1.4	1.1	1.9	1.3

N=number of people

**PROJECT TITLE:** Development and Implementation of Computer Based Instruction for

**PROJECT FACULTY:** David M. Buehlmann and Kenneth Zika

**DEPARTMENT:** Accounting

**DESCRIPTION.** The introductory course in Accounting (Elementary Accounting I and II) is the foundation upon which the Accounting curriculum is built at Illinois State University. Mastery of the basic concepts and skills in this course is fundamental to success in all advanced Accounting courses. Yet the course suffers from low student motivation and has a reputation of being exceedingly difficult. According to the authors of the project, one of the principal reasons for the existence of such conditions is the diversity of background experience which students bring to the course. Using the PLATO system (PLATO is the acronym for Programmed Logic for Automatic Teaching Operations) and programs being developed at the University of Illinois by Professor James McKeown, this project was designed to stress individual pacing, deal with a wide range of learning rates, and still provide each student with the competence to continue in Accounting if he so desired. Thus, it was intended that the programs developed by Professor McKeown for the PLATO system would be used as a substitute for the more traditional instructional procedure in Elementary Accounting at ISU. The general purpose of this project was to evaluate the effectiveness of this alternative procedure.

The specific objectives of the project were:

1. The adaptation of existing Accounting software packages to be consistent with the Accounting student's background and the Accounting curriculum objectives at Illinois State University.
2. The development of new modules concerning specific areas in Accounting for which computer based programs did not exist.
3. The collection and analysis of data to evaluate the effectiveness of computer based instruction at Illinois State University.

The accomplishment of these objectives was dependent on the existence of two PLATO terminals on the ISU campus. Approximately 500 students were enrolled in 15 sections of Accounting 131 during the spring semester, 1973. Two sections meeting at a "prime time" were designated as a pilot experimental group who would use the computer assisted instruction modules throughout the semester in lieu of traditional instruction. While intensive efforts were undertaken to have the terminals installed prior to the beginning of the semester, the terminals were not available until two months after the beginning of the semester, nor were they sufficiently operational during the next month that they could be used reliably. As a result, the Elementary Accounting software packages were no longer appropriate to the curriculum sequence and the original objectives were no longer viable.

Given the constraints of time, efforts were concentrated on reviewing and adapting three of the available Accounting lessons. Also, in an attempt to provide some familiarity with the terminals and to approximate

the original goals, one program that still seemed appropriate, entitled Fixed Assets, was used in a comparative study. Two terminals, which were being shared with the Department of Chemistry, were set aside for exclusive use by Accounting during one week in May. The students in the experimental group were scheduled, two per hour on Monday and Tuesday of this week for their first experience on the terminals. Each student was instructed to read a chapter in the basic textbook and was given a handout on the nature of the project and the operation of the terminals. They were also informed that there would be assistance at all times if help on the terminals was needed. Students in the control group were taught in the regular manner.

Unfortunately, the computer in Urbana was not operational for much of these two days and it was not until late Tuesday afternoon that the terminals could be used. During the remainder of the week occasional system failures forced students to restart modules that had been partially completed. Thus, even this attempt to provide an alternative instructional procedure was severely protracted.

EVALUATION/STATUS. Despite the brevity and technical problems involved in the pilot study some data were collected and analyzed. These are briefly summarized here for illustrative purposes. The control group's performance on a chapter test was significantly better than that of the experimental group. However, it appears as if a large percentage of students still seem in favor of computer assisted instruction. It is interesting to note that after the terminal experience, student opinion became more polarized. Whereas only 8 percent were opposed to use of terminals at the onset, 28 percent were less favorable after the experience. Sixty percent of the students felt a need for a textbook for a reference source and 84 percent preferred to review a hard copy of the problems they worked. In brief it would appear, despite the negative outcomes on the achievement test, that computer assisted instruction is an optional instructional mode which deserves a continued and more thorough examination. It also seems as if more traditional instructional modes should be available to some students and serve as a supplement for others. However, further test of these possibilities has been postponed for the present in the hope that many of the technical and logistical problems may be resolved.

**PROJECT TITLE:** Culture Synthesis in General Education—Applying the Model of Study Abroad to the Campus

**PROJECT FACULTY:** Theodore Sands, Roy Austensen, George Barford, Bodo Fritzen, John Gueguen, Mostafa Hassan, Gerlof Homan, Walter Kohn, Bernard McCarney and George Petrossian

**OFFICE:** International Studies

**DESCRIPTION.** ISU has offered overseas study programs in Salzburg and Grenoble since the fall of 1969, and a third center was opened in Brighton, England in the spring, 1973. These centers have offered sophomores an opportunity to earn fifteen credits in General Education by studying the culture on site. Each center has had three key characteristics: concentration on a single culture, interdisciplinary teaching, and direct contact with the culture. It was the purpose of this project to design programs in French and German culture which would transplant these aspects to the ISU campus.

Faculty members, who with but one exception had experience at one of the centers in Europe, were formed into two planning teams, one for French and the other for German culture. Both teams had identical disciplines represented in the membership: History, Political Science, Economics and the appropriate foreign language. A member of the Arts faculty was also represented on the French team. Throughout the semester, each group met independently with the purpose of solving the many problems an interdisciplinary activity presents, but few of the members realized how complex these problems were. In retrospect, the functions of both teams were similar: (1) to learn and understand the strengths, weaknesses, and idiosyncrasies of the other team members, (2) to operationally define an interdisciplinary activity which would provide an integrating and synthesizing experience in General Education, (3) to retain and maintain the identity and rigor of the disciplines involved so that participants would have a better grasp of the relevant culture and knowledge of the concepts and skills offered in companion introductory courses without a cultural emphasis, (4) to obtain a rudimentary and appreciative knowledge of the content of other disciplines in the program. Although not explicitly enumerated in the original proposal or verbalized during the process, these were the "true" although latent concerns of the teams. Much of their energy was devoted to this agenda.

The more manifest items to which their energy was devoted were the construction of syllabi, compatibility of schedules, selection of textbooks, reservation of rooms, provisions for credit, policies on dropping segments of the total sequence, obtaining ancillary materials, adjusting content to be rigorous yet sufficiently interesting to attract students, informing advisors at freshman registration of the nature of the course and its requirements, developing publicity materials, identifying supplementary resources on and off campus, providing for breadth as well as depth of experience, establishing admission requirements both in terms of numbers and previous experience, and general planning of the day-to-day activities; especially of the first two weeks.

In addition to formal campus instruction, an optional two-week study in Europe is being planned to occur during the period between fall and spring semesters. The itinerary and experiences of this trip, for which the expenses will be borne entirely by each student, is being designed to provide application of the more theoretical program content.

**EVALUATION/STATUS.** Despite the inherent appeal of interdisciplinary efforts, the rationale appears to be more easily verbalized than implemented. Whether or not the programs will be successful is still questionable. What has been done looks promising, but the real determinant is the student.

Starting in the fall of 1973, a maximum of forty freshmen, who have had no more than two years of high school preparation in the chosen language, will be allowed entrance into each program to study either German or French culture. Every student will be enrolled in introductory courses in Political Science, History, Economics, and the foreign language, and an Art course will be included as part of the French studies. While a weekly colloquium for credit will be offered in the German program, the French sequence will offer biweekly meetings sans credit. Fifteen hours of credit may be earned by following these formats, and the optional field trip is expected to provide an additional two hours.

One of the outcomes of the project has been greater knowledge about the complexity and problems in designing an interdisciplinary program; it requires a great deal of time on the part of very dedicated and talented faculty, and it requires a sense of community. In this program these were provided by common experiences in the overseas study centers, and a commitment to the belief that an integrated and synthesized study of another culture is a valid educational experience.

Secondly, an interdisciplinary undertaking is a developmental process. The process involves continuous compromising, designing, testing, and revising. A specific example in this project is the lack of a comprehensive syllabus despite the many hours of effort. One of the interdisciplinary programs at ISU which has achieved more than a modicum of success (cf. description of Humanities I and II) has required over five years of development; yet, it qualified for an "innovative" grant in this program.

A third outcome is the necessity of creating and maintaining an intellectual tie with the parent disciplines. The history of those emergent disciplines which are a product of synthesis illustrates this point quite clearly. To cite two examples, Social Psychology has painstakingly achieved a separate identification through its own traditions, skills and concepts, but Educational Psychology, with a much shorter history, has still not attained separate status from its parent discipline. This project has recognized this phenomenon at work on a much smaller scale.

Finally, it was recognized that interdisciplinary planning is a disorderly and complex process involving moments of chagrin and consternation, for the process of agreement among disciplines is not an easy task.

**PROJECT TITLE:** Learning Resource Center

**PROJECT FACULTY:** Robert Holdridge and Margarette Selbel

**DEPARTMENT/UNITS:** Information Sciences, Milner Library, And Student Government

**DESCRIPTION.** A university-wide Learning Resource Center was developed with the broad goals of acquiring, generating, and delivering educational packages through a variety of innovative delivery systems. This project was a fusion of three original proposals submitted by the Department of Information Sciences, Milner Library, and Student Government, and represents a consensus of those three parties. The Center was envisioned as ultimately providing a wide variety of services to the campus and surrounding community. These would include:

1. A self-instruction center open to members of the campus and community.
2. Area Learning Resource Centers (ALRC) providing geographically dispersed extensions of library facilities.
3. An extensive library of educational packages acquired and generated in response to requests and needs of the campus and community.
4. A design office which would assist in the development of educational packages tailored to specific expressed needs.
5. A graphic production laboratory where learned skills may be practiced.

This project was designed to provide selective action in each of these areas on a trial basis to determine feasibility of each goal. Specifically, the immediate objectives of this project were:

1. To develop a pilot self-instruction laboratory.
2. To develop a prototype ALRC in one of the residence halls (Watterson) in conjunction with Milner Library.
3. To generate self-instruction packages in the production and utilization of media in conjunction with Media Services and the Department of Information Sciences.
4. To establish a simulation design center.
5. To develop a pilot graphic production laboratory with equipment compatible with the proposed self-instruction packages.

In recognition of the importance of proficiency with audio-visual equipment, ISU has established a self-instruction laboratory in which these skills can be learned and practiced. Instruction on this equipment has been provided largely through written instructions accompanying the various machines and supplemented by student or civil service personnel who staff the facility, but all too often these procedures have proven inadequate or unreliable. Due to equipment breakdown, sometimes a substitute machine has been installed which does not have the same characteristics as the original; thus, the written instructions are inappropriate, and the laboratory personnel lack the necessary skills and/or time to provide corrective instruction. The purpose of this phase of the project was to develop a series of printed or videotaped instructional packages which would provide reliable and effective self-instruction; therefore, scripts, texts, and illustrations were developed by graduate

students and Media Services.

The development of an ALRC was another accomplishment which can be compared to an already existing arrangement. Over the last two years 20 library centers have been established in the residence halls. Under coordination of a librarian from a central library and the Student Government, access to a limited number of materials including reference items, leisure reading materials, and frequently used reserve holdings has been provided. The success of these centers has varied with the operation of the Student Government and the clientele it serves. The ALRC was designed as an alternative library program. In the ground floor lounge area of the largest residence hall on campus, a room was set aside and equipped with tables, chairs, stacks, and materials appropriated from two library centers in the building and monies provided for this project. Majors in Library Science staffed the facility at all times.

Meanwhile, in the Simulation Design Center, under the auspices of Student Government, a group of students who had interest in and some experience with the design of simulations and games undertook the purchasing and development of those which could be used in classrooms. Working with faculty, these students did original research, designed, developed, and produced a number of games which were relevant to the instructional goals of several courses.

A Graphic Production Laboratory was also to be designed to provide access to equipment and materials which would enable faculty and students to make their own audio-visual products. Using self-instructional packages and a limited number of necessary materials which would be made available in the facility on a cost basis, the clientele could use the equipment provided to make overhead transparencies, dry-mount laminations, and other relatively simple audio-visual products.

EVALUATION/STATUS. Twenty-one self-instructional packages which included instructions for the operation of 16 mm, 8 mm, overhead, slide, film-strip, opaque projectors, and other audio-visual equipment and procedures were prepared. These instructions were located in small lighted lecterns in carrels containing the pieces of equipment in the self-instructional laboratory. A civil service staff person was on duty at all times to insure proper operation of the equipment, but most of the instruction was contained in the packages. Each completed package was installed, and by the fall of '73 it is expected that all of them will be completed including the videotape presentations, which will provide flexible and effective instruction for a clientele of over 1500 students in the Professional Sequence and many who are taking courses in audio-visual methods.

When the ALRC formally opened its door on March 19, it contained reference materials, paperbacks, newspapers, journals, and required readings for the Professional Sequence, and it provided a greatly expanded service over that of counterpart library operations. For the most part the heaviest demand was with the Sequence materials, however the students found it a congenial place where leisure reading could be done in an atmosphere quite unlike that of Milner Library. Its availability corresponded to a time period in the academic year which historically has shown a lessened usage of library facilities, thus it did not receive the patronage which it is expected would occur had it been opened at an earlier date. This model, when combined with library centers which have



been deemed highly successful, is expected to provide a comprehensive service to students.

Students in the Simulation Design Center operation were able to complete four games which were used in History classes including games on the CHACO War, Election of 1896, Russian Revolution, and Weimar Revolution. Although formal objective data were not collected to assess the effects of the game, one professor in whose class the 1896 election game was used wrote:

"It met my objectives in terms of providing an active learning experience. Students who have sat glassy-eyed through many a lecture were among the most active participants in the game/simulation; observing the students in action gave me a different perspective on the extent to which various individuals were 'learning' U.S. History. It is common knowledge that all students do not shine in the standard testing process. I found the game/simulation rewarding and useful in that it provided me with some fresh and different evidence to balance against test scores, in that it helped open lines of communication and discussion between me and a broader class population, and most of all, in providing a good learning experience for the students."

The reactions of the students although not as generally complimentary were nevertheless highly favorable. Based upon the experiences gained through this first attempt, the designers and producers are planning to continue the Center.

Due to difficulty in obtaining equipment until the end of the academic year, the Graphics Production Laboratory was never made operational. Thus, there is no evidence upon its effects.

The Learning Resource Center was a complex and challenging experiment. In the fusion of three separate proposals, it was a compromise for all participants, and the coordination and logistical problems reduced its overall impact. Although it accomplished some of its objectives, a true test of its effects will not be available until later.

**PROJECT TITLE: Computerized Searching of the ERIC Files**

**PROJECT FACULTY: Tse-Kia [Kup] Tcheng and Elizabeth Harris**

**UNIT: Computer Services**

**DESCRIPTION.** ERIC, an acronym for Educational Resources Informational Center, is an organization which was founded in 1966 by the U.S. Office of Education. The purpose of ERIC is to maintain the results of current research in education in a central location. This body of research materials consists of federally funded research reports, state and organizational reports, convention proceedings, yearbooks, bibliographies and reports of nonfunded research. In addition, ERIC reviews over 500 professional journals, referencing and abstracting those articles which have relevance to education. In 1970, this information was put on computer tape so that the searching process could be computerized. Recently, Computer Services acquired the computer tapes and the programs necessary for searching via the computer. Basically, to engage in a computer search it is necessary to specify key words and phrases, and to conjoin these in a sequence with the logical connectors "and" and "or." The computer then searches the ERIC tapes for documents which meet these specifications and provides, along with other information, a listing of the document titles and ERIC identification numbers. This information can then be used to gain access to microfiche copies of the original documents in the ERIC collection maintained in Milner Library.

This project was designed to acquaint students with ERIC and to encourage use of the computerized searching system. Thus, the objectives of this project were:

1. To familiarize undergraduate education majors with the ERIC information retrieval system.
2. To develop a slide series for classroom introduction of ERIC.
3. To prepare a self-instructional package for use by students or faculty members who want to become familiar with the ERIC retrieval system. This package will consist of a video tape and manual which describe the system and introduce its usage.

To implement the project, all department chairmen were contacted and informed of the nature of the project. Selected classes were visited to introduce the ERIC retrieval system and students were given an opportunity to conduct an ERIC search. Furthermore, those teaching techniques and examples which were identified as most instructive were incorporated into the instructional package.

**EVALUATION/STATUS.** The project personnel were able to demonstrate the techniques of a computer search to a wide audience. During the course of the semester 775 students were reached as thirty-seven classes were visited to introduce students to the ERIC retrieval system. These classes included courses in nine departments: Special Education, Elementary Education, Education, Psychology, Foreign Language, Agriculture, English, Sociology-Anthropology and Information Sciences. Also, approximately 550 group and individual searches were conducted in conjunction with this

program. To evaluate the project, an ERIC questionnaire was constructed to sample student attitudes toward the program. In general, students indicated that the material was of some interest; 48 percent rated the classroom presentations as interesting and 16 percent rated them as uninteresting. Of those who conducted an ERIC search 60 percent were satisfied with the results and 18 percent were dissatisfied. Dissatisfaction arose when students were not able to locate the references in the library or when a small number of references were identified.

Additionally, a color slide sequence was completed to be used for future classroom presentations of ERIC. The videotape was completed as a self-instructional tool. It was judged to be most effective for introducing the student to ERIC concepts and capabilities. Future taping activities will be directed toward competency based self-instructional searching skills.

**PROJECT TITLE:** Production of Social Science Learning Activities for the Professional Sequence

**PROJECT FACULTY:** Charles Gray and Walter Pierce

**DEPARTMENTS:** History, and Curriculum and Instruction

**DESCRIPTION.** The Professional Sequence is a competency-based education program for pre-service high school teachers. Desired teaching behaviors are specified in self-paced instructional packages, and a demonstration of competency is needed for each packet before credit is awarded.

Features common to each instructional package are (1) a set of the instructional objectives, (2) questions to be answered, (3) required and optional learning activities, and (4) evaluations. The learning activities required in these units encompass a wide variety of content areas as vehicles in accomplishing objectives. Thus, students are often faced with subject matter from disciplines other than their majors.

The purpose of this project, then, was to provide replacement Social Studies learning activities for those that currently direct students with that major to unfamiliar content areas. This development was limited to those sections of the Sequence which are regarded as crucial to preparation for student teaching and which would lend themselves, at a later time, to an experimental control study to determine if there are advantages to confining models and examples to students' academic majors.

Alternative learning activities and revised examinations were developed for the following instructional packages: (1) General Model of Instruction; (2) Precise Instructional Objectives; (3) Taxonomies of Instructional Objectives; (4) Structuring and Sequencing Subject Matter; (5) Development of a Teaching Strategy; (6) Planning and Teaching Concepts and Principles; (7) Planning and Teaching an Analysis Lesson; (8) Planning and Teaching a Synthesis Lesson; (9) Planning and Teaching a Psychomotor Lesson; (10) Teaching in the Affective Domain; and (11) Planning and Teaching an Evaluation Lesson.

**EVALUATION/STATUS.** Copies of the developed materials will be available for implementation in the Professional Sequence for the fall semester in '73. The evaluation will be based in a large part on whether or not these alternative learning activities produce significant increases in learning or positive attitudinal change. If such increases are demonstrated, an undertaking of similar projects in other departments would be indicated.

**PROJECT TITLE:** Improvement of Undergraduate Education through Individualized Curricula and Intensive and Unified Academic Advisement and Vocational Counseling

**PROJECT FACULTY:** Robert Moore, Elaine Dunbar, Ethel Flecke, David Livers, and Grace Pittman

**OFFICE:** Academic Advisement

**DESCRIPTION.** Upon entering the university, many students are unsure of the most appropriate major and career for them. They also show concern about employment upon graduation. This project was designed to allow for greater curricular freedom for students, and to provide a more intensive and unified program of academic advisement and vocational counseling. This flexibility and assistance should enable students to cope more effectively with the vocational problems created by a rapidly changing society. The goals of the project were as follows:

1. To help students to develop and continuously reassess educational and vocational goals.
2. To enable students to make more intelligent educational and vocational decisions.
3. To assist students to anticipate the results of educational and vocational decisions.

Fifty-nine students entered the program at the beginning of the second semester of their freshman year. They were admitted to the program on the basis of interest and motivation. Upon entering the program they were freed from the requirements of a major and a formal general education pattern. Through individualization of their total programs, students had the opportunity to select, with guidance, courses and other educative experiences that were the most educative for them in view of their interests, abilities, educational background, and personal and vocational goals. As a result of their participation in the program it was expected that students would find it necessary to set goals and assess their own strengths and weaknesses. Hopefully, a feeling of responsibility for their own decisions will be developed as they begin to perceive their careers as a pursuit of self-defined goals.

Initial program activities included a group counseling session which was generally followed by individual counseling and the appraisal of interests. After this period in which general interest patterns were identified, various types of career education seminars were scheduled. The Director of the ISU Bureau of Appointments gave a general presentation on career selection and employment prospects. Following this, career seminars were provided in a number of areas, including corrections, health fields, computer science, and commercial art and advertising. ISU faculty members and area business-men served as seminar leaders. In addition, students were assigned to an advisor who is to continue in this relationship until graduation or until they leave school, decide to enter a program in which a major is declared, or request a different advisor. With their advisors, students selected fall semester courses designed to provide both a quality general education and a coordinated body of skills in career oriented areas.

EVALUATION/STATUS. In order to assess the effect of this advisement program, a questionnaire was designed and administered to individuals in the program at the beginning and at the end of the semester. Forty-eight students completed the initial questionnaire and forty-one students responded to the final one. Pretest-posttest gains were most marked in statements which suggested that the students had made real progress in discovering vocational interest, and that they felt that, within the university, there was real concern for them as individuals. Initially, 66 percent of the students indicated that they had made minimal progress in discovering vocational interests, while on the posttest only 17 percent indicated that was the case. Also, the proportion of students who felt that within the university there was real concern for them as individuals increased from 65 to 83 percent.

Additional pretest-posttest results indicated that ratings of the quality of academic advisement had increased markedly. Initially, the quality had been rated "excellent" or "good" by 49 percent of the students; at the end of the semester the percentage had increased to 78 percent.

One of the characteristics of the project was the waiver of requirements of a major and a formal general education pattern. The students in the project apparently perceived this as a benefit since 90 percent of the respondents indicated that they had been able to plan a better educational program for themselves under such a waiver.

A student survey about vocational concerns was also administered as a pretest and posttest. In the pretest, 70 percent of the students indicated a great concern about making a vocational choice, while in the posttest only 45 percent of the students expressed the same concern. Also in the pretest, 69 percent expressed concern about vocational abilities, while this dropped to 45 percent in the posttest.

As a result of the student survey, it would appear that there was a significant change in student attitude toward career counseling. Additionally, those items with the greatest pretest-posttest shift were the ones with the greatest face validity. However, the results would be much clearer if data had also been gathered from the other various counseling and advising sectors of the university. In addition, to evaluate the fuller implication of an advisement program of this type it would be necessary to study the choice patterns of the students involved in the program over the next few years.

**PROJECT TITLE: DOIN' SOC**

**PROJECT FACULTY: A. Kay Clifton**

**DEPARTMENT: Sociology-Anthropology**

**DESCRIPTION.** This project was to provide an opportunity for students to learn about Sociology through experience rather than traditional lectures and examinations. The objectives of this course, Introduction to Sociology-SOA 106, were:

1. To facilitate the growth of sociological imagination.
2. To increase motivation for learning about society and people.
3. To improve comprehension of sociological concepts and perspectives.
4. To increase commitment to the process of learning.
5. To increase interaction among students about course material.
6. To increase the sense of responsibility for providing an evaluation.
7. To minimize authoritarian classroom processes.
8. To increase mutual learning among students, and between students and teacher.
9. To share rather than compete with other students.

In an attempt to meet these objectives, the approximately 350 students taking this course in the spring of '73 registered for a two-hour lab session and a one-hour lecture. A mass lecture, designed to give an overview of the content to be discussed in subsequent laboratory sections, was presented to students each Monday, and eleven weekly discussion-laboratory sessions were scheduled. The instructors were either graduate students or upper-division majors in Sociology, and they had total responsibility for these sessions including content, assignments, attendance, length of session, and final grade.

**EVALUATION/STATUS.** This project, which is in its second year of development, is an explicit reaction against those modes of teaching which obtain a high degree of knowledge, usually of a short-term character, but have little if any transfer in settings outside of the classroom. Stated more positively, this project is built on the assumption that experience is a good teacher and that learning, interaction among peers, and egalitarianism between student and instructor is not evil.

These goals are not easy to achieve, and this project was less than uniformly successful in obtaining all its objectives.

In general, students disliked the large group lecture and attendance declined until less than one-tenth were present at the end of the semester. There was a group of students who attended virtually every large lecture, but for the most part less than 50 percent attended more than five of the 16 scheduled lectures. Reactions to the small group discussions varied with the instructor, some being highly favorable others being very critical. Performance for grading was usually based on projects or papers, with some instructors also using class participation as a criterion. The expected grades were generally high as

well as the perceived attainment of the stated objectives of the course; however, the question "Would you recommend this course to your friend or enemy" received mixed reactions, from the participants.

It seems that this is a course for a special clientele. Some students think this is the way a university course should be, and others think they have wasted their money. It appears that the course is still in need of development.



**PROJECT TITLE:** Experimental Social Philosophy Course

**PROJECT FACULTY:** Craig Goodrum and Lance Stell

**DEPARTMENT:** Philosophy

**DESCRIPTION.** This project was designed to investigate new methods for conveying the application of philosophical principles to the analysis of social issues. This new course attempted to show how philosophical principles are embedded in the social experience of the 20th century. Specifically, this course attempted (1) to develop new techniques for teaching the social philosophy course; (2) to teach the basic tools of philosophy; (3) to develop in the student a greater awareness of the significance and complexity of the forces at work in our common history.

To implement the project, the course was divided into four major sections, each designed to explore the philosophical dimensions of a 20th century phenomenon. Three speakers were scheduled to come to campus to provide a focal point for each of the units, and to generate enthusiasm and background for further writing and discussion. The speakers and the titles of their lectures were:

Dr. Bernard Gendron  
University of Texas,  
Austin

"The Value of a Brave New World"  
"Prospects for a Brave New World"

Dr. Frederick Wakeman  
University of California,  
Berkeley

Two lectures on "Mao and Counter  
Utopianism"

Dr. Carl Cohen  
University of Michigan

"Democracy: What"  
"Democracy: Why"

The first section of the course focused on the Nurenburg Trials in order to raise the issues of the moral and legal responsibility of individuals for their actions and for the actions of their social groups. Film and documents were used to acquaint the students with the event. In the second section, various theories and definitions of freedom were examined. Dr. Gendron's lectures on freedom in "A Brave New World" were the heart of this part of the course. The section on the "Chinese Cultural Revolution" carried through on the problems of individual freedom and responsibility in a non-western context. Dr. Wakeman helped to interpret the relevance of modern China for social thought. The final section of the course began with lectures by Dr. Carl Cohen on the nature and justification of democracy. The class then proceeded to discussions of the relationship, both conceptual and causal, between democracy and the values of freedom and equality.

The course met two periods per week in large sections and one period per week in small discussion groups. Discussion groups, led

by the project faculty, focused on short student papers on the materials presented in lectures. Emphasis was also placed on recognizing distinctions and assumptions in writing or discourse.

**EVALUATION/STATUS.** In order to evaluate the effect of the Social Philosophy course a Critical Thinking Orientation Inventory was given as a pre- and posttest. The inventory samples preferences and perceived characteristics about interest and ability to engage in critical thinking and problem solving. The mean pretest score was 34.8 and the mean posttest was 36.03 for the thirteen item inventory. Using a one-tail test, this difference was statistically significant ( $p < .05$ ). Greatest gains were associated with items in which students indicated that they enjoyed problem solving and examining contrary views.

At the end of the course students were also asked to estimate the progress they had made toward selected educational goals related to critical thinking. ISU freshman norms were available for these items from an institutional study conducted in the spring. In that study the frame of reference for responding to these goal statements was the totality of the college experience. In comparison with the freshman norms, the estimates of the students in the Social Philosophy course were significantly higher for (1) awareness of contemporary problems; (2) ability to define problems; (3) ability to recognize assumptions; (4) ability to select relevant information. There were no significant differences for the remaining five goal statements: (1) development of personal philosophy; (2) development of intellectual curiosity; (3) development of intellectual objectivity; (4) development of open-mindedness; (5) development of a desire for persistence and order.

Relative to the speakers, 95 percent of the students indicated that these speakers made a valuable educational contribution to the course. The project faculty thought the speakers were highly successful as a focal point for the unit, and that they provided substance for further discussion and writing for the small group sessions. However, mild disappointment was expressed that students did not take fuller advantage of meeting such famous personalities who, in fact, were quite willing to meet and talk with students personally.

An additional aspect of this project was that the format of the class, two large lecture classes and a scheduled discussion section, was experimental. This course is generally taught in regular class sizes. While the degree of satisfaction with this experimental format was significantly lower than that expressed by ISU freshmen towards such a format, the students in this class did rate the quality of the educational experience significantly higher.

In summary the evidence indicates that reasonable success was attained in achieving the project goals. Because of the importance of the educational goals this project attempts to achieve, it would appear worthwhile to undertake a systematic study of student writing products and determine if there is a correlation with student perceptions of their achievement. Additional attention and study should also be given to the feasibility of the large lecture format of the course.

**PROJECT TITLE: Student Government Association Internship**

**STUDENT INTERNS: James Manis and Howard Adelman**

**SPONSORING AGENCIES: Student Government Association [ISU], and the Association of Illinois Student Governments [AISG]**

**DESCRIPTION.** It was the purpose of this project to provide two internship positions with the AISG. Unlike the more traditional internships, where the faculty or the agency delineates the tasks and duties of the intern, this project was designed to provide almost complete freedom for the students. The objectives of the project were:

1. To provide for additional credit options, thus diversifying the educational process.
2. To provide a vehicle for the acquisition of practical experience in governmental processes.
3. To direct general student interest into projects which have benefits for the student, the university, and the community at large.
4. To provide for an influx of practical off-campus educational experience through the students' returning to campus following the internship.

Two students were selected by the Student Government Association for the internship program. One, Jim Manis, was vice president of the ISU student body and state chairman of AISG. He chose to study "Governance in Higher Education" from a sociological and political science viewpoint during his internship. The other intern, Howard Adelman, who was a member of the advisory committee for the Board of Higher Education for the State of Illinois, chose to investigate "Financing Higher Education" from an historical and a political science viewpoint. Fifteen hours of university credit was to be accrued by each student in the study of these two topics. The immediate supervisor was the executive director of AISG; however, the responsibility for the credit was assigned to on-campus faculty members.

The interns spent one or two days on campus and the remainder of each week from the middle of January through the month of April gathering material for their investigations during visits to Springfield, Chicago, Washington D. C. and many of the public and private institutions of higher education in the state of Illinois. The first few weeks of the project were used to determine what the parameters of the problem were. Meetings, conversations, interviews, and presentations comprised the activities during the majority of the remaining time. Finally, much of the month of May was spent on campus synthesizing these experiences into a final report.

**EVALUATION/STATUS.** The values of this project are three: the personal perceptions of the participants, the effects on ISU, and the larger effects for the community at large.

Both participants are firmly convinced that this experience was personally worthwhile. In addition to the political contacts they made, which are of no small importance to students with political aspirations,

they felt they acquired a realistic knowledge of the political process in both state and federal government as well as the intricacies of higher education. Their poise, confidence, and public speaking skills were equally improved.

The effects on the institution are less clearcut and tangible. One of the interns is working in the Office of Financial Aids this summer and is assisting in the registration procedures for incoming freshmen known at ISU as Preview. Although a request has been submitted for continued funding of the internship program, the institution has not capitalized on the potential effects that can be obtained by using students in liaison roles at the state and national scenes.

Apparently, the community at large received greater benefits than ISU per se. The interns' lobbying efforts in Washington are seen as direct contributions to a change in federal law regarding student financial aid. Presumably, all students in the state of Illinois will benefit from this action. And the students at Eastern Illinois, a sister institution in public higher education, are requesting internships of an identical nature for next year.

It would appear that students of exceptional quality and enthusiasm can be provided relatively autonomous and independent internship programs, which if capitalized on could represent a significant extension of the activities of the Institution of Higher Education in the political arena. In addition to providing direct benefits to the interns, students can bring a perspective to problems which the more jaundiced and self-serving administration and faculty cannot provide. While working on problems which are of personal interest, without restrictions or pressures of many other tasks, these students have brought and presumably others can bring enthusiasm and dedication to their work with the help of the relatively small sum of money the project requires. This is not an internship for every student; rather, it should be allocated with great care to those few who seem qualified.

**PROJECT TITLE: Television-Computer Based Statistics Self-Instruction**

**PROJECT FACULTY: Paul Winn, Tse-Kia Tchong and Terry Childers**

**DEPARTMENT: Business Administration**

**DESCRIPTION.** The television-computer based project seeks to improve instruction in business statistics at Illinois State University through the utilization of instructional technology in the development of a self-instructional course. This type of delivery is expected to improve the potential for learning by increasing the instructional flexibility for students of varied intellectual capabilities.

Essentially, the project required the development or acquisition of two series of television tapes on basic statistical concepts, and a group of remote computer programs. These materials provide the student of business statistics the opportunity for individualized tutorial work, testing, and problem solving. As a result, students are able to work at their own pace to attain a better grasp of theoretical statistical concepts.

During the course of the project, the following materials were developed:

#### TAPES

1. Video tape slide presentation on interpretation of multiple regression analysis computer output.
2. Video tape slide presentation on the theory of analysis of variance (1 and 2 way).
3. Video tape slide presentation on theory of chi-square analysis.
4. VTR presentation of calculation of chi-square statistics.
5. VTR presentation on theory of multiple regression analysis (conceptual).
6. VTR presentation on short-cut methods of working ANOVA problems and interpretation of ANOVA computer output.
7. VTR presentation on introduction to the computer and Eastgate Hall.
8. Assorted computer programs.

#### PROGRAMS

1. Terminal program for mean, median mode (Monte Carlo potential).
2. Terminal program for binomial distribution (Monte Carlo).
3. Batch program for ANOVA (Block).
4. Batch program for chi-square analysis.
5. Batch program for multiple regression analysis.
6. Batch program for Monte Carlo study of the Central Limit Theorem.

#### EQUIPMENT

1. Purchased two VTR playback units.
2. Rented and operationalized one remote terminal with Chicago hookup.

EVALUATION/STATUS. Essentially this is two stage project. Stage one can be conceived as the development of the adjunct materials focused on accomplishing the following objectives in terms of student output:

1. Students will be conversant with the basic terminology of statistics.
2. Students will be able to work problems of a basic conceptual nature.
3. Students will be able to solve problems in a transfer setting.
4. Students will know how to use the desk calculator, computer terminal, and computer to help them solve problems.
5. Students will be able to interpret statistical results and read computer output.

Stage two can be conceived as the complete operationalizing and evaluation of these materials in terms of the objectives. The project can be conceived as being at the end of the first stage. Student self-pacing and small group learning sessions are seen as some methods for implementing the complete use of the materials. A more complete experimental design could then be set up to evaluate the use of the instructional schemes.

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**PART II**  
**THE INSTRUCTIONAL INNOVATION PROGRAM**  
**AT**  
**ILLINOIS STATE UNIVERSITY**  
**INTRODUCTION**

## INTRODUCTION

The Instructional Innovation Program (IIP) was designed to provide alternatives to conventional instruction. Similar in purpose to the Educational Innovation Program (EIP) projects presented in the preceding section, IIP was designed to improve the quality of undergraduate education at Illinois State University. Fifty-one projects designed by individual faculty members were funded from a total allocation of \$50,000 during the 1972-73 academic year.

Individual faculty members were invited to submit proposals which would improve instruction. Although any proposal to this end was invited, priority of consideration was given to proposals designed to implement the University's commitment, stated in the Academic Plan, for "exploring and encouraging the development of instructional innovation, including the extended use of educational media and instructional technology" and developing "new and more flexible means for learning which will be better adapted to individual capacities in needs of students." This program was not intended to provide funds for (1) research projects; (2) released time for faculty members including faculty salaries; or (3) travel funds for attendance at regular professional meetings and conferences. As a result, IIP represented certain significant departures from the EIP projects. Monies in the EIP program were to be used for systems, programs and other broad scope projects; whereas the IIP monies were to be used for small scale projects or "mini-grants." Monies in IIP were not to be used for released time for faculty; faculty devoted time to their projects beyond regular teaching loads. And finally because of the less complex nature of the review process, proposals in this program could be submitted at any time with approval or rejection being given by the review panel shortly after the first of each month.

Eighty-seven proposals were evaluated by the committee which had also reviewed the EIP proposals. Dr. Charles Morris presided as chairman of the committee.

As in the EIP program, IIP illustrates the commitment of the faculty of Illinois State University to the improvement of undergraduate instruction. It might even be argued that IIP represents an even greater commitment inasmuch as time to work on a project was not provided. These projects, with the moderate amount of support provided for the amount of effort required, were clear indications of the desire of the faculty to improve undergraduate instruction.

Gene Tabker  
Coordinator of Instructional Evaluation

**PROJECT TITLE: Improvement of Instruction, School Planning**

**PROJECT FACULTY: Elwood Egelston**

**DEPARTMENT: Educational Administration**

The project attempted to provide students of School Plant Planning more actual experiences, and to provide instructional materials which could be updated easily. The materials were to provide flexibility in class processes while assuring that the basic course content be adequately covered.

Instructional packets were developed which contained taped discussions, monographs, periodical articles, and pamphlets covering 20 topics usually included in the course. These packets were available to students who either missed class or wanted to pursue the topic further and to all students when topics were omitted from class discussion. Class sessions included additional discussions by such authorities as architects, attorneys, and contractors. Visits to schools for study of special interests were made without omitting essential course content.

The use of the packets was favorably received by the students. As a result, the scope of packets will be expanded to involve more guest speakers and outside experiences, and similar packets will be developed for use in other courses.

**PROJECT TITLE: Combining Internships in Local Government with Formal Classwork**

**PROJECT FACULTY: Joseph C. Honan**

**DEPARTMENT: Political Science**

This project attempted to combine classroom learning experience with an ongoing public administrative experience and to relate academic materials to specific real-life problems of governmental administration. Peripherally, it provided an on-the-job atmosphere and a career potential in local government.

The central experience for each student was the assignment of an individual local governmental project. Liaison supervisors were appointed to oversee the work experience, which was coordinated by the instructor. Weekly summaries of activities were exchanged in class and discussed. Appropriate reading assignments were also given. A separate ongoing evaluation of student learning growth was maintained and compiled in a final report.

Students expressed an increased awareness of government, how the work of agencies fit together, and other vital learning obtained through their project participation. They also felt greater involvement and identification with the community.

**PROJECT TITLE: Self-Instructional Teacher Skill Materials**

**PROJECT FACULTY: Louise E. Dieterle, Donald S. Kachur**

**DEPARTMENT: Professional Laboratory Experiences**

This project designed a package of self-instructional teaching skill materials (audiotapes and printed instructional materials) to assist pre-service teachers in improving skills related to lesson preparation and presentation.

The skill package contains four audiotapes and four sets of printed materials, organized into definite sequential steps. The preservice teacher: 1) reads about the specific skill, 2) listens to and critiques an audiotape demonstrating the use of the specific skill, 3) teaches and analyzes a mini-lesson focusing upon the specific skill, and 4) reteaches and analyzes the lesson for skill improvement.

The use of these self-instructional materials allows the teacher freedom to select a period of time and use a variety of classroom settings for the study and practice of teaching skills. Such a program helps to create a way for students to work out an independent study plan, and self-instruction is also more convenient for the in-service teacher.

**PROJECT TITLE: Alternative to Conventional Advisement**

**PROJECT FACULTY: William E. Arnold**

**DEPARTMENT: Information Sciences**

This project set up preview sessions to provide students with the knowledge of specific course content before they had to pre-enroll for their semester classes.

The individual preview sessions varied in length from thirty to sixty minutes. Specifically, each session gave the student the opportunity to meet the instructor, observe the way he handles the class, receive the course syllabus, find out what textbooks are to be used, and discover what papers, tests, and other assignments are involved in the course.

While the preview program offers the obvious advantages of exposure to class offerings, it also offers a chance to improve student academic advising. With preview, the student can become his own best adviser, for he knows what content is going to be offered in the courses in which he is interested. The preview course program offers one opportunity to demonstrate that departments are indeed interested in their students and in the courses they select.

**PROJECT TITLE:** Development of a Take-home Laboratory Program for Large Section General Education Chemistry

**PROJECT FACULTY:** Ronald L. Cook

**DEPARTMENT:** Chemistry

This project developed take-home activities in chemistry in order to: 1) involve the student in experimentation, 2) give the student experience in evaluating data, and 3) encourage innovation in the process of completing the activity. Nine activities were developed, seven of which were used in two class sections. The students took home activity kits. They carried out the activities as outlined in the instructions, recorded their results, and returned the results to the instructor. Time varied from the span between classes to a full week to await some results.

The students filled out a questionnaire at the end of the course. Although no control group was available, a chi square analysis of their yes-no responses was made with a 50% expected yes response. On this basis, with one degree of freedom, all questions had responses beyond 0.001 significance. The students were 90% or more in favor of continuing the program for future classes. Ninety-six percent felt that the take-home experiments definitely added to the classroom experience.

This program may permit large numbers of undergraduate students to engage in limited laboratory experiments. It is economically practical, and with further study the instructor's time problem with packaging and grading should be solved.

**PROJECT TITLE:** Multimedia Theatrical Experience

**PROJECT FACULTY:** Roger Holmes

**DEPARTMENT:** Interdisciplinary

The purpose of this project was to establish the interdisciplinary connections necessary to produce the sort of communication phenomenon known to the youth culture as the "event" or "theatre piece."

The project involved the cooperation of several departments. Students enrolled in a variety of courses in order to gain the knowledge and experience necessary for a successful production. A new University course in Cinematography was begun.

The outcome of this project was a multimedia theatrical experience known as "Mung." The production intertwined music, films, acting, cartoons, painting, and dancing before a full house at Westhoff Theatre. The students involved had the rare opportunity to integrate their work in several different courses into a unified whole.

**PROJECT TITLE: Getting Freshman Comp All Together—An Experiment in Instructional Methods in Introductory Composition**

**PROJECT FACULTY: L. Brosnahan**

**DEPARTMENT: English**

This project attempted to determine if Freshman Composition can be taught more effectively, from both the teacher's and the student's point of view, by bringing correction, revision, and grading into the classroom.

Student themes written outside of class were mimeographed for students and copied on transparencies for the instructor. Papers were then read, corrected, and revised, and finally graded by the group. All class time was spent in direct appraisal of the writing done by the class. All reading on the theory of writing was done outside class.

The uniting of correction, revision, and grading, the control of revision by the instructor, with fuller comment than is possible in written form, and the sharing of all these judgments with the group resulted in fuller instruction than is possible in the conventionally taught section. Conventional grading and correcting separates the operations in time so far as to put strain on the continuity of the operations. This project approaches as nearly as is practical a tutoring relationship, while bringing together all the operations before the students in a comprehensible way.

**PROJECT TITLE: Library Orientation Project**

**PROJECT FACULTY: Bryant H. Jackson**

**DEPARTMENT: Milner Library**

The three goals of the project were: 1) to assist in developing library skills that enhance academic achievement, 2) to expand the library's program for individualized instruction, and 3) to improve the student's ability to pursue independent study.

Unit priorities were established, based upon both observed need and the accessibility of materials. With the advice of a media consultant, committee members developed narratives, took photographs, purchased materials, and arranged for production through Media Services.

Three packages were produced: general orientation, ERIC, and periodicals indices. Formal evaluation is planned with the general orientation package, and informal evaluation with the ERIC unit has been favorable. With these packages students can make more efficient use of class preparation time. This mediated approach creates a flexible program to better meet a variety of individual, small group, and classroom needs.

**PROJECT TITLE:** Fitness Through Diet and Exercise

**PROJECT FACULTY:** Linda Sorrells

**DEPARTMENT:** Health, Physical Education, and Recreation

Through this course students will gain knowledge and practice in developing personal fitness goals, exercise plans, and diets. They will also be able to more scientifically analyze advertisements for quick reducing gadgets and fad diets.

Two 30-minute lecture-laboratory periods per week are presented over television and may be viewed in the residence halls. Lectures are given by members of the departments of physical education, home economics, and biology. Periodic discussion and evaluation sessions are conducted. Obese students have the opportunity to select modified menu items from the residence hall cafeterias. As a result of the project, 15 video tapes have been produced. Tapes provide information on weight control and fitness topics. These tapes eventually will be available to the community via cable TV.

This project caused the development of a new course, Fitness Through Diet and Exercise. Presently, fifty-six students are enrolled in one section which will be offered in the fall. It also resulted in the first interdepartmental approach to the problem of weight control and fitness on this campus with assistance given by the health service, food service, housing office, and campus recreation as well.

**PROJECT TITLE:** Vignettes of Logical Process Models for Training Social Studies Teachers

**PROJECT FACULTY:** Charles E. Gray

**DEPARTMENT:** History

This project developed a series of instructional video tapes to be used in the training of prospective social studies teachers in the Social Studies Methodology course (History 390). It was hypothesized that instruction using the video tapes would enable teacher trainees to achieve methods course objectives more efficiently.

The investigator and assistant developed television scripts and used them in the production of video tapes in a class of University High School students.

The project is in the process of completing video tapes. One video tape will be produced and pilot tested as time and resources permit.

It is hoped that the video tapes will provide a more effective means of instruction. In the fall of 1973 a completed video tape program will be available for use in the methodology course, and for use of individual students as needed.



**PROJECT TITLE:** Legal Aid Internship

**PROJECT FACULTY:** Thomas Eimermann

**DEPARTMENT:** Political Science

This project sought to acquaint students with legal problems of the poor and the effectiveness of various methods for supplying legal assistance. It was also designed to equip students to assist local attorneys in a para-legal capacity and thereby more accurately evaluate their desires and abilities to pursue a legal career.

Students studied substantive aspects of the law through lectures and research assignments. They studied the operation of the local legal aid structure by evaluation data from surveys conducted by the class. The class compiled the first comprehensive data on the effectiveness of the local legal aid operation.

The most significant result, however, was that two-thirds of the class is now better prepared to succeed in law school while the other third was able to determine (before spending a year in law school) that their career interests were not in the legal field after all.

**PROJECT TITLE:** Enrichment of an Elementary Statistics Course Via the Use of Instructional Television Tapes

**PROJECT FACULTY:** Gary C. Ramseyer

**DEPARTMENT:** Psychology

The objective of this project was to provide increased instructional time for the difficult topics of sampling error theory and hypothesis testing in Statistics I without sacrificing student acquisition of the more fundamental concepts.

The production of eight thirty-minute video tapes covering the major content of descriptive statistics was initially proposed. Hopefully, these would condense the preliminary portion of the course from six weeks to two weeks. Students would be required to view these tapes on their own during the first two weeks of the course.

Due to limitations on funds and television production staff, the project was cut and provided for only the production of a single pilot video tape. The pilot tape is scheduled for production in late June or July, 1973. The script has been written and the visual aids are being prepared by Graphic Arts. If additional funding can be obtained for the remaining tapes, the instructional delivery system for Statistics I would be greatly improved.

**PROJECT TITLE:** Faculty Seminar in Curriculum Evaluation

**PROJECT FACULTY:** Mort Walmon

**DEPARTMENT:** Curriculum and Instruction

The purpose of this project was to clarify the concept of evaluation as it is applied to instructional innovations by describing the evaluative behavior of innovators, and by classifying the types of evaluation studies made available.

The ERIC system was searched for funded instructional evaluation studies. Evaluation and research studies were differentiated. Over 100 curriculum evaluation studies were identified, and the statements in these studies were classified according to the functions the statements were intended to perform. Finally, the studies themselves were classified.

A final selection of exemplary studies was made and ordered for a special collection of curriculum evaluation studies in Milner Library. This collection will be available as a model for future innovators at ISU. A faculty seminar was also conducted during the spring semester.

Curriculum evaluation might prove to be a more fruitful way of improving instruction than the use of a research strategy. Instructional innovations should reflect our values as much as controlled observations.

**PROJECT TITLE:** Self-Instructional Materials in Teaching Word Analysis

**PROJECT FACULTY:** John M. Ewing

**DEPARTMENT:** Curriculum and Instruction

This project provided experience to determine the feasibility of using self-instructional materials to develop competency in word analysis skills.

The students were given a pretest in September. The results were compared with a posttest given to an experimental and a control group near the end of the semester. During the spring semester, copies of the material were placed on overnight reserve in the self-instructional laboratory. Students were directed to study the material and ask for help as needed.

Students in the experimental group had a posttest mean of 31.3, a standard deviation of 5.77, and a mean gain of 10.6. This compares with the control group's posttest mean of 28.8, and standard deviation of 5.19, and mean gain of 4.3. Students using the materials in spring semester showed a mean gain of 13.8. This indicates that competence in word analysis can be developed using self-instructional materials.

**PROJECT TITLE:** Center for Economic Education

**PROJECT FACULTY:** Douglas Poe

**DEPARTMENT:** Economics

The Center, funded internally and externally, supports activities and experimentation related to the teaching of undergraduate and public school economics. The Center is currently putting its beginning economics course on TV cassettes. It is almost finished with its performance evaluation of the Principles of Economics course. A summer short course for teachers will take place in July, 1973.

The experimentation and evaluation concentrates on the undergraduate beginning course in economics. The results of the performance evaluation of various instructional strategies will be used to reform the beginning course.

**PROJECT TITLE:** *Economics TV Cassette Program*

**PROJECT FACULTY:** Douglas Poe

**DEPARTMENT:** Economics

This project will place the entire beginning economics course (college level) on TV cassettes so that students, particularly those off-campus and holding full-time jobs, can take the course at their leisure. Students who demonstrate competence after viewing the cassettes will receive academic credit.

Several skilled instructors are taped while presenting lectures to a non-random audience. Part of the audience will be composed of high school social science teachers who are attending a summer short course. The several tapes that have been made thus far have been used experimentally and have been received enthusiastically.

This project will make the University more accessible to the entire community. Any citizen desiring to gain economic knowledge will be able to do so at the time and place of his or her choosing.

**PROJECT TITLE:** Illinois Earth Project—Geography 205

**PROJECT FACULTY:** C.A. Neale

**DEPARTMENT:** Geography-Geology

The class worked toward publishing a directory of citizens' groups and governmental agencies actively involved with environmental problems in Illinois.

The approach involved task assignment with an open structure. Students completed tasks in accordance with their abilities, interests, or time. Tasks ranged from information collection to assembly of the final manuscript, including editing, proofreading, and artwork.

A directory of environmental groups and agencies was produced. The class evolved into a cohesive unit stimulated by the project itself and worked toward a common goal of completion of the directory. The directory itself is a useful reference tool for citizens, students, and public workers. The assembling of the manuscript was meaningful for the students involved.

**PROJECT TITLE:** Field Experience—Social Reform in Urban America

**PROJECT FACULTY:** William Linneman

**PROGRAM:** Honors

The purpose of this project was to discover the efficacy of using films, including standard entertainment movies, in teaching historical and cultural awareness. A course, Social Reform in Urban America, with an enrollment of ninety, was set up to concentrate on that historical theme.

Movies were used in conjunction with texts, lecture, discussion, research papers, and essay tests. According to student evaluations, the movies set within the framework of the course had a strong educational effect. They psychologically drove home the points made by the other material.

At least two-thirds of the class had not seen many of the classic American films. Thus, the course in cultural history that utilized this medium would provide students a valuable educational experience.

**PROJECT TITLE: Use of Instructional Television in the Teaching of Business Systems Analysis**

**PROJECT FACULTY: Gary Fish**

**DEPARTMENT: Accounting**

The objective of this innovative project was to more efficiently teach a course in Systems Analysis and Design for Computer Programming.

A set of video tapes which focused on training of systems analysts in industry was acquired from Advanced Systems, Inc. The tapes were broadcast over the cable television system into the classroom and replaced twelve traditional lectures. This approach has permitted the class size to be doubled from twenty-two to forty-five with no detectable deterioration in educational quality or decrease in student acceptance.

The instructional television approach has three significant advantages in relation to educational quality. First, the approach permits a faster presentation of the systems analysis and design material. Second, the approach permits a more effective inclusion of the behavioral aspects of systems analysis and design. Third, the faster presentation permits the inclusion of a group project which provides the students with an opportunity to actually apply what they have studied.

**PROJECT TITLE: Improving Achievement Levels in Large Lecture Classes of Mathematics 120 Through Retesting**

**PROJECT FACULTY: Lawrence E. Spence**

**DEPARTMENT: Mathematics**

This project attempted to improve the achievement levels of the students in a large lecture class of Mathematics 120, Algebra for Social Sciences and Business.

Students were encouraged to improve their performance in the class by allowing a student whose initial test score was unsatisfactory two retests over each unit. Those students whose test scores were below the established minimum performance level were encouraged to restudy the unit of material and be re-examined.

The restudy-retest procedure used in the experimental section proved both popular and effective. Mean scores on a common examination showed no significant difference between the experimental class and five small classes, but a significant difference between the experimental section and another large class. Student performance in large mathematics classes need not be poorer than in small classes.

**PROJECT TITLE: Political Television Material**

**PROJECT FACULTY: Robert O. Hirsch**

**DEPARTMENT: Information Sciences**

This project attempted to obtain a comprehensive library on television political spots and to provide material for analyzing political campaigns.

Collections of political programs initiated by CBS's 60 Minutes were taped. Additional tapes were made on a special program focusing on Agnew's attack against the news media with commentary provided by major news correspondents. Political television advertising spots were also recorded.

With the availability of these audio-visual presentations, the undergraduate will have the opportunity to analyze the communication process as it works in a contemporary political campaign.

**PROJECT TITLE: Audio-Visual Taping of Presentations by Selected Successful Agri-Business Personnel to "Agri-Business Operations" Students**

**PROJECT FACULTY: Harvey S. Woods**

**DEPARTMENT: Agriculture**

The project was designed for the purpose of recording the content of the course on audio-visual tape for later use by any student at ISU. Tapes will incorporate the expertise of the "world of work" into the college program. During 1972-73, 20 successful agri-business men were guest lecturers--each for his specialty. Tapes of the best twelve lectures have become part of the "tape library" for future use in the course.

The content of the tapes is good and unavailable elsewhere though technical difficulties made the visual portions less than professional in quality. Students preferred "live" presentations, though they would rather have a tape than no presentation at all.

Many of the students rate the course very highly, primarily as a result of content totally unavailable elsewhere.

**PROJECT TITLE: Video Taping Moves in Strategies for Teaching Mathematical Principles**

**PROJECT FACULTY: Kenneth A. Retzer**

**DEPARTMENT: Mathematics**

The object of this project was to video tape examples of strategies for teaching mathematical principles and to begin incorporating instruction on these moves into our mathematics education courses.

Using a taxonomy of moves developed by Cooney, Davis, and Henderson, alternative lesson plans were made to teach mathematical principles in the usual University High School curriculum. These lessons were video taped in Algebra I, Geometry, Algebra II, and College Algebra classes, taught by the regular teachers or project staff.

The library of eleven video tapes produced contains at least one example of each strategy move in the taxonomy. These tapes are in the Secondary Mathematics Materials Center and are being used in mathematics education courses. They will serve as demonstrations and as models of successful teaching strategies.

**PROJECT TITLE: Mini-Unit Laboratory Packets for Human Anatomy**

**PROJECT FACULTY: Geraldine A. Greenlee**

**DEPARTMENT: Health, Physical Education and Recreation**

The purpose of this project was to develop mini-unit laboratory experiences for the study of myology, osteology, and arthrology in human anatomy classes.

A series of television tapes with guides and follow-up questions are being produced to introduce specific areas of study. The following materials are being prepared for student study in the laboratory period: a prosected cadaver, osseous and ligamentous specimens, 35 mm slide packets and overhead transparencies.

The anticipated outcome of this project is a heightened student interest and understanding of the structure-function relationship of the human body as it relates to movement. The self-instruction approach to the laboratories will enable the instructor to devote more time to individual student problems and interests and to increase the variety of content mastery assessment techniques employed.

**PROJECT TITLE: Key Informant Research**

**PROJECT FACULTY: Michael M. Calavan**

**DEPARTMENT: Sociology-Anthropology**

The students in this project experienced personal contact with Southeast Asia. They became acquainted with the joys and frustrations of working with a "key informant."

A native of Chiang Mai, Thailand (and ISU graduate student) was selected to act as a "key informant" for an instructional unit concerned with Northern Thailand. Each student was allotted four hours of his time to explore a topic of interest. The informant was paid with project funds. Students incorporated the data collected from the "key informant" into research papers.

This modest program provides students a concrete, personal experience with the cultural area studied. It also provides an opportunity to experiment with one of the major research techniques of Cultural Anthropology.

**PROJECT TITLE: Intern Type Education**

**PROJECT FACULTY: Tom Brigham and William Arnold**

**UNIT/DEPARTMENT: Computer Services and Information Sciences**

Under this project, students in Information Sciences, Mathematics, Accounting, and allied areas were provided with experience in working with the computer. Besides the practical value of first hand experience, the project provided each intern with specialized material (both conceptual and pragmatic) not presently contained in coursework. The intern and his advisor decided on the appropriate material.

Each student who entered the program attained an intern curriculum with the Operations Director of the University Computer Center. Each student worked at his own pace and reported periodically to the director. At the completion of the Operations internship, the student was given hands-on experience with the University computer facilities.

The interns' evaluations were very positive. None of the students indicated dissatisfaction with the program. Although no University course credit is given for the internship, it is the plan of the department to continue the program without IIP support.



**PROJECT TITLE:** Developmental Geometry Project for Preservice Elementary Mathematics Teacher Education

**PROJECT FACULTY:** Stanley R. Clemens and Phares G. O'Daffer

**DEPARTMENT:** Mathematics

The basic objective of this project was to prepare textual materials in Geometry for preservice elementary school teachers. The technique was to develop exercises which create a laboratory environment in which students discover the mathematics of a problem by using physical materials.

The written materials emphasize an inductive-intuitive approach to Geometry as it emanates from the physical world, rather than a formal deductive approach. The strategy employed is described sequentially: Investigation, Discussion, Utilization, and Extension.

The students who used these materials have obtained acceptable standards on achievement tests. The results of an attitude inventory suggest that they felt the investigation approach was an appropriate, desirable way to learn the material. While they rated the course difficult, they at the same time believed that their ability to investigate ideas had improved and that they were more confident and creative in exploring a mathematical problem.

**PROJECT TITLE:** Student Participation in Executive Bowl Competition

**PROJECT FACULTY:** Robert T. Tussing

**DEPARTMENT:** Accounting

The object of this proposal was to provide funds for a team of students to compete in the Executive Bowl sponsored by Michigan State University. A team of four students selected from Accounting 367 worked together in preparation for the contest. The team was accompanied to Michigan State University by the project director. The three-day conference involved outstanding students in an interactive, dynamic, competitive marketing computer game.

The ISU team was one of the top challengers among competition from some of the better schools in the Midwest. Only one team had a better score than the ISU team. As a result, one ISU team member was selected to represent all students in a three-hour panel discussion of the executive game as a teaching technique.

It is obvious that the Department of Accounting course "Computer Applications for Business Decision-Making" is doing an excellent job using the newest teaching techniques. Results of this project should provide an even greater incentive for future students enrolled in this course.

**PROJECT TITLE: Information Systems Experience for the Non-Professional**

**PROJECT FACULTY: Tom Brigham**

**DEPARTMENT: Information Sciences**

This project provided "non-professional" persons at ISU with experience in extracting data from management information systems. Non-auditing classes had the opportunity to use STRATA and other retrieval packages, using the computer. Several interns were used to help students work with the computer. The project also investigated the trends in using computers at other firms and schools.

The hours of the computer center were expanded to allow more convenient times for students to work with the computer. As part of this expansion, the interns under another innovative project were employed. The additional hours also provided extra experience for them, thus producing a two-fold benefit in the innovation projects.

The reaction of those who participated indicated that the project was very valuable. The contacts with firms and other institutions indicated that similar plans for experience of this kind had been beneficial and encouragement was received in terms of expanding the program at ISU to incorporate the use of STRATA and internships, both relatively new applications in this area.

**PROJECT TITLE: Audio Supplement to Written Library Resources for Projects in Rhetorical Criticism**

**PROJECT FACULTY: John K. Boaz**

**DEPARTMENT/UNIT: Information Sciences and Computer Services**

This project entailed the purchase of a number of disc recordings and cassette audio tapes of important contemporary speakers for use by students undertaking projects in rhetorical criticism in such courses as Communication and Social Issues. The dual objectives in this project were 1) to provide students a supplement to written library resources in their rhetorical analyses, since oral aspects are important to the rhetorical-persuasive process, and 2) to provide students audio aids with which to supplement their oral reports to the class.

Students were thus able to hear, for example, a speech made by Martin Luther King, Jr., rather than to base their analysis upon a written text or description.

Students observed that these resources provided them with means for better insight into speakers and speeches. Classes felt that these aids added interest, variety, and memorability to oral reports.

**PROJECT TITLE:** Undergraduate Tutorial Project

**PROJECT FACULTY:** James A. Hallam

**DEPARTMENT:** Accounting

Under this project, the Department of Accounting selected four outstanding Accounting students who were to serve as tutors for the 1,000 students registered in elementary accounting classes. The tutoring service was offered in a dormitory conference room rented with funds provided through the project. Each tutor was available eight hours per week for a total of thirty-two hours per week.

The students and the tutors evaluated the project. Both students and tutors overwhelmingly recommended continuation of the tutoring service. The students feel that this program is a tremendous help to them.

The only change that will be made in the tutoring program is that regular classrooms will be used in the future rather than dormitory space.

**PROJECT TITLE:** Implementation of STRATA into the Auditing Course

**PROJECT FACULTY:** Alan J. Rausch

**DEPARTMENT:** Accounting

This project acquainted Auditing students with STRATA, a generalized computer audit software package donated by Touche Ross & Co., an international CPA firm. Students prepared by viewing a slide/lecture demonstration of how to use STRATA. They then completed two auditing applications with STRATA, working in two-person teams.

All students successfully completed the assigned applications and had sufficient exposure to STRATA to realize its capabilities. A survey of student opinions regarding STRATA indicated that 68.7 percent of the students were glad to have the chance to learn STRATA, and 64.6 percent felt that learning STRATA would be beneficial to them in the future.

ISU was the fourth university in the nation to implement STRATA in the classroom. Education in the area of Auditing/EDP was enhanced by exposing students to a modern, practical tool of the auditing profession.

**PROJECT TITLE: Class Grading of Papers in Freshman Composition**

**PROJECT FACULTY: Mildred Boaz**

**DEPARTMENT: English**

The objectives of this project were: 1) to consider the extended use of transparencies for class grading of papers in a proficiency-based freshman composition course, and 2) to teach rhetorical and grammatical principles by using student writing instead of textbook models.

The experiment was initiated in six sections of competency-based classes. Competence was determined according to guidelines devised by the Freshman English committee. The use of transparencies for in-class grading of compositions was the main technique used in teaching the first nine weeks of each semester of the course. On the average, six one-page papers were graded each week in each class.

The use of transparencies proved to be an efficient method of communicating the teacher's reaction to student writing. Students were also given an opportunity for input into the grading process. The effect of the teaching was more immediate and personal than in a traditional grading system.

**PROJECT TITLE: Development of Outdoor Teaching Stations in the Environmental Laboratory at I.S.U.**

**PROJECT FACULTY: Loren W. Mentzer**

**DEPARTMENT: Biological Sciences**

The focal point of this project was to allow students to see ecological-oriented relationships in operation in outdoor interpretative centers.

Students have been involved in this laboratory development for three years. This year, they aided greatly in the research, designation, and marking of teaching stations along with continuing surveys of selected flora and fauna. The stations are all permanently marked, records of surveys are filed, and upon the completion of assembling and editing the write-ups and photos, an eight-page brochure will be printed describing the stations.

Students involved in the above projects have gained an ability to pass on sound ecological principles and ideas as they teach and direct the establishment of outdoor laboratories.

**PROJECT TITLE:** General Psychology Master Learning Course

**PROJECT FACULTY:** Walter M. Vernon

**DEPARTMENT:** Psychology

The General Psychology course was presented in a mastery learning format. Thirteen chapters were written in semi-programmed style and used by 1400 students. The programmed questions covered all the important principles in the text material. Weekly examinations with items matched to the programmed questions resulted in a high and continuous level of study effort. 12 percent of the class achieved 643+ of the 650 total exam questions, and 32 percent had scores of 636+.

A final exam compared the mastery classes with 350 students in a traditional class on a test prepared by an outside agent. The median score for the traditional class was 62 percent correct; for the fall 1972 mastery class it was 73 percent correct, and for the spring 1973 class, using improved course procedures, it was 82 percent correct. The mastery students scored 26 percent higher in terms of medians and 22 percent higher in terms of mean scores.

The primary factors responsible for more effective learning are; 1) clear knowledge of what is to be learned, 2) requirement of almost total accuracy on exams, 3) clear feedback on what concepts were not mastered, and 4) re-examination to motivate the student to re-study.

**PROJECT TITLE:** Development of Total Communication Video Tapes on Work Attitudes

**PROJECT FACULTY:** Betsy V. Paarlberg

**DEPARTMENT:** Special Education

This project trained undergraduates in Special Education to adapt regular instructional materials for use with youngsters with impaired hearing. They rewrote narrative and added appropriate visual aids.

After instruction in the writing of a learning packet and in the production of a video tape, the students in the course SED 359, "Teaching Reading and School Subjects for the Deaf", developed and produced visual materials adapted from commercially prepared audio tapes dealing with social learning skills required for successful employment.

The participants gained a knowledge of instructional design and learned to evaluate the effectiveness of teaching materials for the hearing impaired. This first-hand experience will help them develop their own instructional aids in their future teaching careers.

**PROJECT TITLE: Self-paced Individualized Instructional Aids in Agricultural Genetics**

**PROJECT FACULTY: Joe A. Sagebiel**

**DEPARTMENT: Agriculture**

The objective of this project was to improve the instruction in Agricultural Genetics by providing self-paced, individualized instructional aids for the student.

Two separate directions were undertaken: 1) A series of ten tape cassettes with film strips in special self-contained packages were purchased to allow students to supplement the lecture by using these audio-tutorial units. 2) Corn ears from thirty different qualitative experiments were purchased for students to use in the study of corn genetics. Many different modes of inheritance are illustrated in these corn ears which the students can study at their own convenience.

All materials have been purchased, but the course will not be taught until fall, 1973.

**PROJECT TITLE: Family Sociology**

**PROJECT FACULTY: Robert H. Walsh**

**DEPARTMENT: Sociology-Anthropology**

The project's objectives are to show family sociology as a learning process, to make the text's author "alive" by allowing Professor Reiss to answer students' questions, and to allow him to update the text. The procedure was to bring the author to campus to make a series of video tapes where students' questions were answered in a panel-discussion format.

The video tapes were used by two family instructors and shown to over 200 students. There was general agreement that the tapes met the objectives set for them, and that there was improvement from the first to the final tape.

The tapes' significance is that they meet the educationally sound objectives set for them. They allow students, over several semesters, to listen to a discussion series with a national authority in the family field at a low cost to the university.

**PROJECT TITLE:** Utilization of Instructional Training Video Tapes and Micro Teaching  
with Sophomore Women P.E. Majors

**PROJECT FACULTY:** Betty J. Keough, Doris E. Henderson

**DEPARTMENT:** Health, Physical Education and Recreation

In this project, instructional training tapes were developed and used to illustrate the structure of a Physical Education lesson and various teaching behaviors. Learners in the experimental group were expected to attain the ability to identify, demonstrate, and analyze their own teaching behaviors and be able to suggest changes for teaching effectiveness.

The experimental group participated in a series of clinical lessons involving micro-teaching. Instructional training tapes were used as one mode of instruction. Participating students in both experimental and control groups taught a pre- and post- video taped maxi-lesson (10-15 minutes) which was evaluated by the project directors using a predesigned evaluative instrument. As one part of the final examination, students were asked to identify teaching behaviors from a training tape.

Results are in the process of being analyzed. This project serves as an example of early clinical experiences and the use of media in the professional preparation program for majors in Physical Education.

**PROJECT TITLE:** Effective Interviewing Techniques—Instructional Package

**PROJECT FACULTY:** Clayton Thomas

**DEPARTMENT:** Educational Administration

The purpose of this project was to develop a set of instructional materials to teach and demonstrate the proper skills and techniques of interviewing. From a review of the literature and personal experiences, interview techniques were categorized. Video tapes were made to demonstrate the techniques in each skill category. Written descriptions of the techniques were prepared.

These materials were used in classroom situations and evaluated by participants. After revisions were made, a color video cassette was prepared to demonstrate both good and bad interview techniques. The completed package was then used in a one-day workshop with school administrators, and the final evaluations were made.

Twenty-two of twenty-five participants in the administrative workshop indicated that the overall impact of the material was very good or excellent. They felt that the material was realistic and well designed. The materials will be used extensively in courses such as Principalship and Principals' Practicum, as well as in workshops for school administrators held on campus.

**PROJECT TITLE: Stock Market Simulation**

**PROJECT FACULTY: Roger E. Potter**

**DEPARTMENT: Business Administration**

The objective of this project was to provide an enjoyable and educational means for students to apply concepts and principles to a simulated investment environment.

The technique used was the playing of an investment game. The game permits application of several instructional principles. It creates a "need to know," integrates materials and relates them to a real world application.

The results are a broader understanding of the investment process and the principles, concepts, and techniques affecting it. Students are able to see the significance of traditional materials which are presented.

**PROJECT TITLE: Monograph on Behavioristic Psychology**

**PROJECT FACULTY: Rew A. Godow, Jr.**

**DEPARTMENT: Philosophy**

This project developed a monograph on the philosophical foundations of behavioral psychology. Once the 60-page monograph was written, it was used in Philosophy of Social Science during both the fall and spring semesters as a basis for discussion of behaviorism in Psychology and other social sciences.

Students generally found the section on behaviorism to be the most interesting part of the course and found the monograph to be the most beneficial of all the course readings. The monograph was designed for students with little or no background in philosophy and served to promote discussion and understanding of the concepts.

Distribution of the monograph to certain faculty members in the Psychology department has promoted discussion of an interdisciplinary course.



**PROJECT TITLE: Small Group Discussion Procedure for Classes of Sixty Students in the Sociology of Deviant Behavior**

**PROJECT FACULTY: Barbara Sherman Heyl**

**DEPARTMENT: Sociology-Anthropology**

This project provided regular small group discussion opportunities in which the students, largely self-directed, exercised their analytical skills on sociological material in groups of six to ten people, contributed the results directly to the class as a whole (the final 25 minutes of a 75-minute class session), and received weekly instructor evaluation of the written work the groups produced during each discussion period.

Project funds were also used to bring guest speakers from other communities (Chicago, Springfield, and Peoria) to illuminate some aspects of urban deviance and efforts in those cities to control it.

The project benefited 120 students in the fall semester and 160 in the spring. Student evaluations, as well as responses from visiting sociology faculty, recognized the heuristic value in a procedure which gives students autonomy in handling a group task, followed by peer feedback and then instructor evaluation on a regular basis.

**PROJECT TITLE: ISU Urban Education Program**

**PROJECT FACULTY: Sam Mungo**

**DEPARTMENT: Curriculum and Instruction**

This project was designed to develop students' awareness of the realities and causes of urban problems so that they may work in a positive manner with youth from urban centers. The participants provided services to the community and its schools.

The students from ISU lived in low income areas of Peoria for nine weeks. They experienced in depth contact with public schools and community agencies and programs as staff assistants for extended periods of time.

Numerous instruments, including cultural attitude tests, community questionnaires, daily logs, and student input, were used in evaluation of the project. The data indicates that participants made positive growth in relation to the project's objectives and provided exceptional services to the community. A follow-up of the program graduates indicates a high correlation between program experiences and job realities. The results point toward the need for more coordinated off-campus experiences in addition to on-campus courses in teacher education.

**PROJECT TITLE: S M Instructional Package**

**PROJECT FACULTY: Larry Miller**

**DEPARTMENT: Home Economics/Industrial Technology**

The purpose of this study was to design, construct and test a shell molding (SM) instructional package for use in instruction within the department. The process of shell molding involves a resin-sand mixture, which is dumped onto a heated metal pattern to form a tough shell. Pairs of these shells, when placed together, constitute the mold into which the metal is poured in the casting process.

The development of the S M instructional package consisted of two parts: 1) a semi-automated shell molding machine and 2) an accompanying software package. The S M machine is similar in design and operating principles to commercially available models. The software package includes technical data on the shell molding process and operation.

The S M instructional package, when completed, will be designed for maximum versatility. As a result of this project, diverse educational activities are planned in the areas of materials processing, power and energy systems, and safety control.

**PROJECT TITLE: Cooperative Community-University Basic Education Teacher Training Project**

**PROJECT FACULTY: Fay F. Bowren**

**DEPARTMENT: Curriculum and Instruction**

Concurrently with the acquisition of the pedagogical concepts of teaching undereducated adults to read in the classroom, teacher trainees in this project were provided the opportunity to put these principles into action by participating in a supervised practicum experience.

Students received weekly classroom instruction dealing with theoretical concepts and procedures. They immediately applied this learning in practical experience in various community agencies, including Pontiac State Prison, McLean County Alternative School, and several of the programs of the Bloomington-Normal Adult Basic Education Program. The trainee had an opportunity to evaluate teaching problems and performance with the graduate assistant supervising the practicum, the professor, and the community project directors.

This immediate laboratory application of theoretical principles resulted in higher student interest and participation in the learning process. Community projects were benefited by provision of the consultative and tutorial assistance they obtained from the students.

**PROJECT TITLE:** Development of Undergraduate Instructional Techniques Using Electronic Media and Graduate Student Internship Experiences in the Clinic-Laboratory Situation

**PROJECT FACULTY:** K. C. Davidson

**DEPARTMENT:** Speech Pathology/Audiology

This project attempted to improve the balance of lecture and individual performance in large classes, and to meet instructional needs of rising enrollments.

In order to increase the number of individualized assignments, major lectures were video taped and replayed about 14 hours a week, instead of being presented in regular class sessions. Students could view and review the tapes at their own convenience and rate. Each student prepared a video taped oral assignment once every two weeks to be viewed and graded by the instructor.

Students preferred the video taped lecture system by about a 9 to 1 ratio, and video taped oral performance system by about an 8 to 1 ratio. The use of video taped lectures freed the instructor for other assigned educational duties and for additional student conferences. The system should also prove more economical in handling increased enrollments through handling numerous undergraduate student contacts by graduate students experienced in making student critiques.

**PROJECT TITLE:** Provide Meaningful Pre-Student Teaching Classroom Experiences for Art Majors on the Elementary Level.

**PROJECT FACULTY:** Ruth Freyberger

**DEPARTMENT:** Art

The objectives of this project were to make the theory of a required art major course on the elementary level stimulating and practical through opportunities for actual classroom teaching experience.

Following an orientation period on the theory of teaching art in the elementary grades, art majors were placed in elementary classrooms, where they taught a weekly lesson supervised by actual instructors. Student attitude evaluations on elementary teaching were made both prior to and at completion of classroom experiences, and evaluation of teaching skills was made by supervising teachers during the teaching period.

As a result of these teaching experiences, all students grew in understanding of the elementary grade child. The majority did not change their interest level in teaching, but one fourth, uncertain of their teaching abilities at the outset, felt more compatibility with the elementary school child. This suggests a need to include opportunities for teaching in elementary art methods courses.

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